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A REVIEW OF AGRICULTURAL BUSINESS
ISSUED QUARTERLY BY THE ECONOMIC
MARKETING SERVICE
DEPARTMENT OF AGRICULTURE, OTTAWA



THE

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*A Review of Agricultural Business issued quarterly by the Economics Division,
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Vol. XVI, No. 1

Published by Authority of the Hon. James G. Gardiner
Minister of Agriculture

February, 1946

THE ECONOMIC SITUATION

Canadian farmers face the new year with prospects of another year of prices at wartime levels. However, the price of many farm products and farm incomes in 1946 may be somewhat below the high levels of 1944 and 1945. Chief reasons behind the expected high demand for farm products through 1946 are the larger volume required for export and relief, and the expected high level of civilian purchasing power.

Agricultural Program, 1946.—The first peace-time Dominion-Provincial Agricultural Program Conference was held during the first week of December 1945. Canada will maintain its wartime rate of farm production during the next year. The recommendations for 1946 call for little change from the 1945 estimated production. Some adjustments in production have been suggested but in the main, the export contracts and relief requirements call for a maximum output of livestock and livestock products, coarse grains and oilseed crops, and maintenance of production of other farm products.

Cash Farm Income.—The cash income from the sale of farm products for 1945 is estimated by the Dominion Bureau of Statistics at \$1,654 million. This total is about 8 per cent less than the record high of 1944. Payments made under the Wheat Acreage Reduction Act, the Prairie Farm Assistance Act and the Prairie Farm Income Act are not included in these estimates. They do include, however, the amounts paid on account of wheat participation certificates, the oats and barley equalization payments and those Dominion and Provincial government payments which farmers receive as subsidies to prices.

The major decrease in income occurred in the Prairie Provinces. Nova Scotia also showed a small setback. The province of Ontario on the other hand showed a substantial increase. Reduced marketings of wheat account for most of the decline in income in the Prairie Provinces but there were also smaller marketings of barley and hogs.

Business Activity.—The historical maximum of business activity was reached in the early months of 1944 and a declining trend has been shown since that time. The cessation of hostilities during the year 1945 led to reduction in output of munitions and war supplies, especially after the defeat of Japan. However, productive operations during the first eleven months of the past year were greater than in any other year except 1943 and 1944, although the index of physical volume of business receded from 194.5 in October to 189.9 in November (1935-39=100). This decline was due in part to the fact that reconversion of plants for peacetime production is still incomplete and a considerable number of raw materials are in short supply.

Department store sales in the first 11 months of 1945 were 11 per cent higher than in the similar period of 1944. Country general store sales showed an average gain during the same period of 6.5 per cent.

ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Living Costs and Production Indexes Computed by Dominion Bureau of Statistics.

Year	Wholesale Prices 1926=100				Cost of Living 1935-39=100		Commodities and Services used by Farmers, 1935-39=100		Production
	All commodities (1)	Farm products (2)	Field products (3)	Animal products (4)	Urban Living Costs (5)	Farm Living Costs (6)	Eight Factors (7)	Eleven Factors (8)	
1913....	64.0	64.1	56.4	77.0	79.7	79.6	.....	.....	.....
1914....	65.5	70.2	65.4	78.3	80.0	82.0	.....	.....	.....
1915....	70.4	77.9	76.9	79.5	81.6	86.3	.....	.....	.....
1916....	84.3	89.8	88.8	91.4	88.3	93.6	.....	.....	.....
1917....	114.3	128.5	134.5	118.4	104.5	111.6	.....	.....	.....
1918....	127.4	132.6	132.0	136.6	118.3	131.4	.....	.....	.....
1919....	134.0	146.7	142.6	153.5	130.0	143.0	.....	.....	62.3
1920....	155.9	160.6	166.5	150.8	150.5	170.7	.....	.....	65.9
1921....	110.0	103.7	100.3	109.5	132.5	139.5	.....	.....	58.1
1922....	97.3	88.0	81.4	99.0	121.3	127.5	126.9	133.2	69.1
1923....	98.0	81.5	73.3	95.1	121.7	127.9	118.7	128.7	74.7
1924....	99.4	88.1	82.7	97.2	119.5	125.1	122.5	132.6	73.9
1925....	102.6	101.0	98.2	105.6	120.6	123.6	124.3	131.8	79.4
1926....	100.0	100.0	100.0	100.0	121.8	120.9	120.6	129.3	87.3
1927....	97.7	102.1	99.9	105.7	119.9	119.5	120.9	130.1	92.7
1928....	96.4	100.7	92.6	114.3	120.5	118.3	119.4	128.2	102.4
1929....	95.6	100.8	93.8	112.5	121.7	117.4	118.4	127.5	109.6
1930....	86.6	82.3	70.0	102.9	120.8	113.7	105.7	116.3	95.6
1931....	72.1	56.3	43.6	77.6	109.1	103.7	91.8	100.8	81.7
1932....	66.7	48.4	41.1	60.7	99.0	97.7	88.7	93.4	68.7
1933....	67.1	51.0	54.8	59.7	94.4	95.7	88.4	90.0	69.6
1934....	71.6	59.0	53.8	67.7	95.7	97.8	96.8	96.0	82.2
1935....	72.1	63.5	57.3	74.0	96.2	97.9	95.6	96.0	89.4
1936....	74.6	69.4	65.8	75.3	98.1	98.3	98.4	98.0	98.0
1937....	84.6	87.1	88.3	85.0	101.2	102.9	108.5	105.4	107.2
1938....	78.6	73.6	69.0	81.3	102.2	102.0	101.1	101.5	98.6
1939....	75.4	64.3	54.2	81.2	101.5	99.5	96.1	99.1	106.9
1940....	82.9	67.1	55.9	85.2	105.6	108.6	102.3	105.7	124.3
1941....	89.9	71.2	56.5	95.8	111.8	114.2	108.2	114.1	165.0
1942....	95.6	82.5	66.5	109.2	116.8	119.2	119.7	128.0	202.2
1943....	99.9	95.9	81.6	119.9	118.4	121.7	122.4	136.0	235.9
1944....	102.5	102.9	91.8	121.3	118.9	122.8	125.7	138.8	236.3
1945....	103.1	105.4	94.8	123.0	119.5	123.2	125.5	141.2	212.5
1944									
Oct....	102.4	103.0	91.6	122.0	118.6	.....	.....	.....	228.0
Nov....	102.4	103.1	91.5	122.5	118.9	.....	.....	.....	227.9
Dec....	102.5	103.3	92.2	122.0	118.5	.....	.....	.....	233.0
1945									
Jan....	102.8	104.4	93.5	122.7	119.0	122.8	125.3	137.4	228.8
Feb....	102.9	104.6	93.8	122.7	118.6	.....	.....	.....	216.7
Mar....	103.0	105.1	94.0	123.6	118.7	.....	.....	.....	225.2
April....	103.4	105.3	94.0	124.2	118.7	123.0	125.5	142.0	232.2
May....	103.0	104.6	94.8	121.1	119.0	.....	.....	.....	218.6
June....	103.2	105.7	95.8	122.4	119.6	.....	.....	.....	219.5
July....	104.0	107.8	99.2	122.3	120.3	.....	.....	.....	213.7
Aug....	103.4	105.8	96.4	121.4	120.5	123.7	125.7	144.2	212.7
Sept....	102.7	103.5	94.0	119.5	119.9	.....	.....	.....	205.3
Oct....	102.9	105.6	94.1	124.8	119.7	.....	.....	.....	194.5
Nov....	103.1	106.1	94.5	125.5	119.9	.....	.....	.....	189.9
Dec....	103.3	106.3	94.5	125.4	120.1	.....	.....	.....	193.0

1. See Prices and Price Indexes 1913-1928, pp. 19-21, 270-289 and 1913-1939, p. 17.
2. Wholesale prices of Canadian products of farm origin only. See Prices and Price Indexes 1913-1937, p. 52, and Monthly Mimeographs 1943-44.
3. Wholesale prices of grain, fruits and vegetables.
4. Wholesale prices of animals and animal products.
5. See An Official Cost of Living Index for Canada, 1940.
6. Price Index Numbers of Commodities and Services used by Farmers (Revised Mimeograph).
7. Ibid 6. Includes prices of commodities in eight groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.
8. Ibid 6. Includes the eight commodities indicated above plus tax, interest and farm wage rates.
9. Monthly Review of Business Statistics, p. 8 and Monthly Indexes of the Physical Volume of Business in Canada, supplement to the Monthly Review of Business Statistics November, 1932. Yearly index numbers for 1943, subject to revision.

THE FOOD AND AGRICULTURE ORGANIZATION—ITS PURPOSE AND FUNCTIONS¹

J. F. BOOTH

The Organization—FAO—to give it the abbreviated title by which it will be known was conceived at Hot Springs, Virginia in May and June 1943. At that time representatives of 45 nations met to consider what might be done to solve the problem of malnutrition and hunger that had plagued the human race since its origin and which during the decade preceding the war was accompanied by a new and apparent contradiction—the problem of surpluses.

The idea implanted in the minds of men brought forth a declaration of faith and of determination that gave rise to action—action that may mean much to millions of people in the years to come. The Conference made provision for an "Interim Commission" and to it entrusted the task of creating a permanent organization. The Commission with the assistance of a group of able and willing technical assistants drafted a constitution and laid the foundation for such a body. The meeting concluded at Quebec in November witnessed the signing of the constitution by representatives of 38 countries, approved plans already laid for the permanent body and outlined the course of action that should be taken in the months and years ahead.

The Motive for Organization.—What is it that has fired men with enthusiasm and nations with the will to accomplish something? The answer, if it can be expressed in a few words is found in the belief that hunger and malnutrition can be abolished from the earth and that in the accomplishment of this purpose, people everywhere—producers and consumers alike—will benefit. It is to such a belief and to the translation of that belief into action that practical men have given their approval and to which they have pledged their common effort.

The Work of FAO.—The task to which FAO is committed may be divided broadly into three parts. The first concerns nutrition and food management, the second production and the third marketing. Before proceeding with the discussion, however, it may be desirable to refer to a matter on which there has been some misunderstanding. It has been assumed by some that FAO will engage in the actual handling or marketing of products but that is not so. The Organization will, however, work in close co-operation with the United Nations Relief and Rehabilitation Administration (UNRRA) in connection with the immediate needs of various countries, and with other organizations that will be established to deal with international trade, credit, commodity agreements and other matters. It is intended that the work of the organization shall be closely co-ordinated with the activities of the Economic and Social Council of the United Nations Organization. Failure to engage in the actual handling of products does not mean of course that FAO will stand on the side lines looking on while matters in the field of food and agriculture are being considered. On the contrary, it is expected that FAO will be an active body, prepared to initiate projects falling within its field, and ready to assist with advice and encouragement in dealing with such matters.

Nutrition and Food Management.—In its report the Interim Commission Technical Committee on Nutrition and Food Management deals with immediate steps to meet urgent problems of malnutrition, particularly in undeveloped countries. It notes that the people of these countries constitute 1,500 million of the world's 2,100 million people. It outlines measures to be taken on behalf of vulnerable groups—expectant and nursing mothers, children of school and pre-school age and adolescents. It refers to diets and medical care, to special food distribution schemes, to school meals and school gardens. It outlines policies adopted on behalf of workers in industrial countries and tropical and colonial

¹ Excerpts of paper presented at a meeting of the Council for Canadian-Soviet Friendship, Toronto, Canada. November 24, 1945.

territories. It points out that the programs and policies enumerated are capable of wider application and that they will redound to the benefit of both producers and consumers.

As to specific means of assistance the committee suggests that FAO be prepared to (1) supply technical information and advice to governments on nutrition and related matters, (2) assist countries in studies of possibilities of improving diets through better conservation of the nutritional value of foods, (3) further the study of ways of modifying food habits in relation to family budgets and national food resources, (4) aid in the formation of nutritionally adequate food plans for families in different countries, (5) report on the training and provision of trained personnel in matters relating to food and agriculture, and, (6) consider the advisability of convening periodically, groups, committees or conferences to facilitate the exchange of national experience and information.

Production.—The Interim Commission's technical committee on agricultural production classifies the functions of FAO under three broad groups. The first concerns the integration and co-ordination of agricultural programs and concerns primarily the developed countries. It involves collecting facts as to present and proposed agricultural production programs, relating these to prospective deficiencies or excesses, discussing these with the nations concerned and then advising such countries on consequential readjustment in production and trade programs. It includes special studies of agricultural reorientation problems, surveys of the production of major agricultural products, collaboration with other agencies for commodity arrangements and advice to member countries on the integration of agricultural and industrial programs.

The second function relates to the improvement of agricultural production and, though of major importance to the underdeveloped countries, will be of assistance to all countries. FAO should become a world centre for information on agricultural science and for the stimulation of further advances. It should organize panels of experts and be prepared to send missions to any country when aid is sought. It should devote special attention to the protective foods. It should be concerned with development projects, soil conservation, drainage, irrigation, and with the provision of adequate supplies of fertilizers. It should also be in a position to assist with problems in the field of agricultural credit, with tenure and labour problems and with the special problems of co-operative organization.

The third function of FAO in the field of agricultural production concerns education and extension services. The advances in science and technique can be of value only as they are used; it follows that FAO must be active in assisting countries, particularly those that are underdeveloped, to improve educational and extension activities. Assistance in this field should include the training of personnel, education of youth and the development of related general and vocational education.

Marketing.—The functions of FAO in relation to the technical and economic aspects of marketing should include (1) the initiation of information and research services, including statistical; (2) the provision of advisory services and missions; (3) the study of subjects as a basis for recommendation for action by governments, FAO or other international organizations.

On the technical side of marketing the Quebec Conference Committee considers that FAO should provide the above services in regard to the following: physical handling and movement of goods, including research in processing techniques, dehydration, storage and transportation, with a view to aiding countries in need of information on these matters; infestation, with a view to preventing loss in storage and transport; pure food and nutritional standards—as a protection to consumers; commercial grades and standards for staple products; buildings and plants, including layout of markets—to improve local marketing facilities.

Under economic aspects the matters outlined for consideration include the provision of market information, commodity studies with particular reference to surpluses and deficiencies, and research on such subjects as the expansion of demand, distribution and processing costs, market organization, and problems and policies in effect in different countries.

It is observed that in the field of international co-operation the activities which FAO may undertake in respect of marketing again fall into two categories—those which the organization may itself undertake directly with national governments, and those which it can promote only in collaboration with other international organizations. Concerning the former FAO may, after such study as it considers necessary, call conferences of governments with the object of reaching agreements on matters of mutual concern and of preparing conventions or recommendations for adoption by such governments. With respect to matters requiring action by other international bodies FAO may conduct research, submit suggestions, initiate action and participate in discussions.

In the technical field matters upon which FAO could itself initiate action would include the formulation and adoption of international standards or minimum requirements for requisites used in production; international regulations regarding trademarks and labels; uniform grades and standards, including containers, for agricultural and aquatic products; uniformity in commercial documents—contracts, bills of lading, and the initiation of common action against infestation.

Matters such as standardization in respect of nutritive quality and purity of food and the negotiation of agreements as to plant and animal quarantine and inspection would call for consultation with other international organizations.

Collaboration in the Economic Field.—In view of the possibility of surpluses again appearing in the agricultural field the course of action that FAO may pursue in regard to such matters is of paramount interest to both exporting and importing countries.

Looking farther ahead there may be problems with respect to surpluses that will prove incapable of solution by unilateral action. FAO should, through the collection of information and the conduct of research, anticipate such problems. It should in the first instance emphasize the importance of maintaining and developing an expanding world economy with its implications of high consumer purchasing power. Trade restrictions and measures that stimulate uneconomic production should receive consideration. Although action on many of these matters, together with changes in international purchasing power are beyond the immediate responsibility of FAO, the Organization must keep informed on such matters and co-operate with, and advise the Economic and Social Council of the United Nations Organization and other international bodies on action that should be taken. FAO should also advise on matters relating to international investment and commercial policy as they impinge upon the welfare of producers and consumers.

Finally, FAO has under its consideration a special and important responsibility in connection with international commodity arrangements and in respect of any body created to formulate or administer such an agreement. FAO should participate in the formulation of principles and the drafting of such agreements. It should provide statistical information and analyses of commodity situations. It should also advocate as a part of any such agreement measures to mitigate the problem by increasing consumption and adjusting production.

In the preparation of commodity agreements and in the advice it tenders, FAO should endeavour to attain an expanding rather than a restrictive economy, even when the action that follows involves adjustments in production. To this end positive rather than negative action should be encouraged.

Relation to Canada.—There are many other matters that one might discuss concerning the food and agricultural situation and FAO's functions in relation

thereto, but it would seem more appropriate at this time to conclude with a reference to the contribution that Canada can make to this program and the benefits that she may derive from the activities of the organization.

The contribution that Canada can make has purposely been mentioned first, for just as in personal affairs it is more blessed to give than to receive so in considering FAO and its efforts on behalf of humanity, generosity and willingness to contribute should be the keynote of national policy. There should be no evidence of selfishness or acquisitiveness in any phase of our relationship with FAO. If the approach of nations to FAO is on that basis success will crown the efforts of the organization and each nation will in turn benefit.

Canada is in a position to contribute to the work of FAO and our contributions thereto may take several forms. One would relate to the extension of technical and scientific information and the practical application of such information to the solution of problems in underdeveloped countries.

(1) We are favoured by nature with many natural advantages, including large areas of land where advances in science and mechanization can be applied. Because of this and for other reasons, we have been able to produce surpluses for export. This has brought us into competition with other countries and has encouraged us to strive for efficiency both as regards production and in respect of distribution. We may, it would seem, without being accused of boastfulness claim to have made some progress in these fields. Agricultural education is well advanced in Canada. Our experimental and scientific work extending back over a period of more than half a century, has received generous recognition. More recently special consideration has been given to the economics of agriculture. We can claim some achievement in the development of marketing, in the provision of grades and standards, in processing and handling, in transportation and the technique of trading operations. Our statistical services are well organized and we have made progress in the provision of agricultural extension services and markets information. In the conduct of these activities we have acquired a considerable body of trained personnel. We should be prepared to share this knowledge and this personnel with FAO and the countries in need of such assistance.

(2) We should be prepared to cooperate with FAO and with other nations by providing the information requested by FAO both in the form of regular reports and with respect to particular matters.

(3) We should strive insofar as our efforts are in keeping with sound economic policy to achieve a production program that will contribute to national and international stability. Such a program should lead to a better balance in Canadian agriculture. If it did our income position would in the long run be improved and we would at the same time be complying with the recommendations of Hot Springs in regard to raising our own nutritional status, both urban and rural.

(4) We should urge recognition of the principle that in both the production and marketing of products the greatest possible degree of freedom should prevail. We should be prepared to recognize the two-way nature of any such program and be willing to make concessions to help gain for it greater acceptance than was the case in pre-war years. We are in a position to take positive action in this matter and should pursue vigorously the efforts already under way and toward which, it is understood, we have already made some contribution. In this direction lies the greatest hope for the ultimate benefit to all mankind.

(5) As an aid to the development of such a program and for such period as financial assistance may be required, we should be prepared to draw upon our resources to encourage international trading operations. In the provision of export credits the parliament of Canada has already taken a forward step in this direction. As a people we must be prepared to accept the sacrifices that such a program entails, recognizing that in the long run good will result.

(6) If, despite all efforts to the contrary, surpluses of agricultural or other products accumulate we should be prepared both through national and international action to accept our full share of responsibility in any program that FAO might propose to meet the situation.

So much for the things we can do to assist FAO. Turning to the other side, we may reasonably expect to benefit from our association with FAO and the program that the organization will encourage.

- (1) We must find a market outside of Canada for roughly a third of our agricultural production and of an even larger proportion of the output of our forests and fisheries. For that reason alone few countries are more in need of the services that FAO can provide. Only by the development of a program such as is proposed—the raising of standards of consumption everywhere, the expansion of trade and the maintenance of a high level of employment—can Canadian producers and consumers attain the measure of prosperity desired. FAO can, if it obtains the cooperation of nations and the assistance of other international bodies, do much to bring this about.
- (2) In achieving this result it will be recognized that prosperity measured in terms of monetary reward, is not in itself sufficient, particularly if its incidence is not widely diffused. We have been prosperous in the past without everyone sharing in that prosperity. We have had prosperity for the nation as a whole while many of our own people, both urban and rural, have through lack of nutritional knowledge or lack of means, been inadequately fed. Better balance in production—more of the protective foods—should be our aim in the future. Along with this should go an expanded program of education in nutrition and food management. This has been said in another way but it will bear repetition. FAO can help us in this regard.
- (3) Notwithstanding what was said with regard to our ability to contribute scientific information and trained personnel we have no monopoly on either of these. We expect to benefit from what other countries have done and from the assistance that their personnel working through FAO, can give. This applies both to assistance through regular means and by special missions.
- (4) One of the most important requirements in modern agriculture is statistical information. It is impossible to formulate policies and programs or to conduct production and marketing activities satisfactorily without up-to-date and comprehensive statistics. FAO will provide such statistics and we will gain from such a service.
- (5) Much the same statement may be made concerning agricultural policies and programs in other countries. We would be working in the dark were we unaware of what other countries were doing or contemplating. There must be the freest possible exchange of such knowledge and FAO can assist very materially in this regard.

In concluding this paper it should be stated that these things—this program as a whole—whether thought of in terms of FAO or in relation to Canada can be achieved. Their achievement will not come at once however. Years may elapse before the maximum of accomplishment is reached. It is believed, however, that every step in the direction indicated will be accompanied by beneficial results. FAO in company with other international organizations can lead the nations of the world into an era of human betterment if the nations will but cooperate. Canada will share in this betterment to the extent that we cooperate in bringing it about.

WARTIME DEVELOPMENTS IN THE CANADIAN LIVESTOCK AND MEAT TRADE II**H. K. LECKIE**

Beef cattle production was on a low phase of the cycle as the war commenced. As a result, as herd building got under way, and domestic meat consumption began to rise, there was no beef marketing problem during the early years of the war. In fact, during 1942 particularly, a shortage of beef on the domestic market developed. This was accentuated by restrictions on the domestic slaughter of pork, which starting in 1941 were imposed to make more export bacon available.

In immediate pre-war years shipments of cattle to the United States provided the main surplus beef outlet for Canadian cattle producers. Under this arrangement it was possible to ship 193,950 head of cattle annually to the United States, of which not more than 51,720 head could go forward in any one quarter, at the reduced tariff. In 1942, with cattle slaughterings falling below domestic requirements, the Dominion Government found it necessary to take action to prevent excessive numbers of Canadian cattle being attracted to the rising United States market. The Wartime Food Corporation was set up as the sole cattle export agency, and was empowered to remove any surplus cattle from the market. These were subsequently either exported or sold to domestic packers. Actually few cattle were exported, and the Government absorbed the losses incurred by the Corporation in buying and selling cattle.

By the fall of 1942 it became evident that the beef cattle cycle was sharply on the uptrend, and that it would soon be necessary to provide arrangements for marketing surplus beef at satisfactory prices. Negotiations were undertaken with the British Government with a view to shipping surplus beef overseas through a centralized agency.

Accordingly in June, 1943, the Bacon Board became the Meat Board, and was empowered to purchase surplus frozen beef for export to Britain at seasonally adjusted floor prices. For some time no offerings of beef were forthcoming, as the shortage of pork products on the domestic market and the keen demand for all meats, enabled packers to dispose of all available beef at prices above the export floor. This continued until the fall of 1943 when cattle marketings finally became sufficiently heavy, in coincidence with unprecedented hog slaughterings, to result in some surplus beef for export. Up to the beginning of 1944, however, less than a million pounds of carcass and boneless beef had been cleared for Britain.

In 1944 beef began to occupy an increasingly important place in Meat Board operations due mainly to a substantial increase in cattle marketings. However, the removal of restrictions on the domestic distribution of pork products resulted in some recovery by pork of the ground previously lost to beef in the domestic meat market.

As a result in 1944, out of an inspected slaughter of 1,354,000 cattle, the Meat Board was offered some 130,000,000 lb. of export beef (carcass basis) or the equivalent of approximately 260,000 head of cattle. At the same time no live exports of cattle to the United States were permitted to go forward.

Effective August 21, 1944, the beef floor price policy was revamped. The principal change from the previous arrangement was the substitution of a flat year-round export floor price for each grade and quality of beef, in place of the seasonally adjusted floor. The main object of this change of policy was to provide a stabilized outlet for the various grades of surplus finished beef, leaving feeder cattle to find an appropriate level. Under the earlier policy, cattle feeders who had purchased feeder steers in the autumn of 1943 at ceiling prices or higher found themselves in serious difficulty in the spring of 1944 when they came to market the finished stock.

In the fall of 1944 such a heavy volume of cattle marketings developed that at some markets, notably Toronto, there was a temporary glut, due to lack of

packing plant labour and freezer space. However, these difficulties were overcome and weekly slaughterings attained a record peak of 40,000 head.

With cattle numbers at the top of the cycle, slaughterings have continued seasonally high throughout 1945. By September weekly slaughterings had already passed the 46,000 mark, substantially exceeding the record established in 1944. For the year the inspected slaughter exceeded 1,820,000 head, more than double the pre-war level. During the calendar year 1945 shipments of Canadian frozen beef to Britain were substantially heavier than in 1944, reaching a total of 209 million pounds, or the equivalent of about 448,000 head on a live basis.

Mutton and Lamb.—Interest in sheep raising was lagging somewhat at the start of the war particularly in Eastern Canada. It was not long, however, before increased requirements for wool brought a campaign for building up farm flocks. Although early in the war increased demands for meats other than pork had not yet been clearly indicated, a little later the expanding market for mutton and lamb, in common with other meats, served to complement the demand for wool.

In response to an active campaign sponsored by Dominion and Provincial Departments of Agriculture, the sheep industry began to take a new lease on life and by 1944 the annual June 1 live stock survey showed that numbers of sheep on farms had reached an all-time high of 3,725,000 head, an increase of close to a million head over 1940.

As in the case of beef cattle, there was no marketing problem of consequence until the cycle had advanced to the point where marketings began to sharply reflect the increased numbers on farms. In the latter half of 1943 and the first half of 1944, problems with respect to the marketing of surplus mutton and lamb began to develop, with resulting effect on lamb prices. Factors in the situation included the concurrent heavy increase in slaughterings of hogs and cattle, transportation and storage difficulties, export permit restrictions on the shipment of live lambs to the United States and meat rationing.

In December, 1943, the WPTB announced a ceiling price policy for "spring" lambs and other classes. To help relieve the marketing problem early in 1944 the Meat Board completed arrangements for the sale of surplus frozen mutton and lamb to the British Ministry of Food. Subsequently in 1944 slightly over a million pounds of mutton and lamb were cleared at seaboard under this agreement.

TABLE III.—INSPECTED CATTLE SLAUGHTERINGS AND WARM DRESSED WEIGHT, 1939-1945

Year	Inspected Slaughter	Total Warm Dressed Weight	Average
1939.....	872,574	406,794,720	466.2
1940.....	889,898	415,098,321	466.5
1941.....	1,004,101	468,622,384	466.7
1942.....	970,315	485,237,254	500.1
1943.....	1,021,334	519,564,297	508.7
1944.....	1,354,104	679,936,574	502.1
1945.....	1,820,127	884,600,293	486.0
Total.....	7,097,961	3,441,420,939	484.8

In the fall of 1944, with a heavy lamb crop ready for market, the Canadian Government, effective September 28th, removed the export permit restriction on live sheep and lambs. This resulted in a brisk export movement of sheep and lambs to the United States market in the last quarter of 1944 and the early months of 1945.

On July 6, 1945, export permit restrictions were again placed on sheep and lambs, due to the difficulty being experienced in finding sufficient meat in Canada to satisfy domestic and export requirements. At the same time, however, it was announced that the Meat Board would stand ready to purchase surplus mutton and lamb for export under a policy similar to that employed in shipping surplus beef. This would protect sheep producers against the price depressing influence of accumulating storage stocks.

Although wool production in Canada is sufficient to satisfy only a small part of domestic requirements, the wartime increase in numbers of sheep on farms brought a corresponding increase in the wool output, which in 1944 reached a record total of over 19 million pounds. At the same time quality was improved through a Dominion-Provincial wool bonus policy, which placed a premium on clean, well-prepared fleeces.

Control of Domestic Consumption.—Although coupon rationing of all meats in Canada was not found necessary till 1943, increasing overseas requirements for bacon led to controls restricting domestic pork consumption two years prior to meat rationing. In order to meet United Kingdom bacon requirements during the Second Agreement, the Bacon Board in May 1941 (Order No. 2) took steps to control the domestic slaughtering of hogs by means of a licensing system. This was accompanied by two other measures, an eat-less-pork campaign and the imposition of quotas limiting the weekly domestic distribution of pork products to the average of 1940. (Order No. 1) Shortly afterwards, in July, 1941, export of live hogs for slaughter was banned, the export of pork products to other than Empire Countries was prohibited, and domestic quotas were reduced by 25 per cent, or to 75 per cent of the 1940 figure.

In 1942, as previously indicated, cattle slaughterings declined to a point below increasing domestic requirements. To ensure meeting commitments under the Third Bacon Agreement, the Bacon Board in September, 1942, further reduced domestic hog quotas to 50 per cent of the 1940 base, and at the same time the Department of Agriculture launched a campaign asking consumers to curtail purchases of pork products as much as possible during the autumn months.

Restrictions on the slaughter of hogs for the domestic market continued on into 1943. In May, 1943, coupon rationing of all meat commenced under the direction of the Foods Administration of the Wartime Prices and Trade Board. In June 1943 the Meat Board came into existence. One of the new Board's first steps was to issue Meat Board Order No. 1, effective July 12, 1943. This revoked Bacon Board Orders 1, 2, 3, 4 and 5 and consolidated and tightened up previous regulations respecting hog slaughtering quotas and the domestic distribution of pork products. This order remained in effect until October 25, 1943 when it was cancelled by Meat Board Order No. 3. From that point on there was no restriction on the sale of pork products domestically (except for rationing) until January, 1945 when the Board began to requisition a percentage of the Grade A and B1 hogs killed at packing plants where Dominion hog premiums were paid. Starting January, 1944, Dominion Government premiums of \$3.00 on Grade A carcasses and \$2.00 on Grade B1 carcasses were paid to producers through approved abattoirs.

During the fall and winter months of 1943-44 meat production in Canada rose to the highest levels in history. Both hog and cattle marketings broke all previous marks. In view of this situation, which resulted in surplus meat accumulating in cold storages faster than transportation overseas could be found for it, meat rationing was suspended at the end of February, 1944.

Meat production continued at record levels in Canada during 1944. By the beginning of 1945 beef production was still increasing but hog marketings were apparently on the down grade. At the end of the first half of the year the situation with respect to export bacon supplies had further deteriorated, and in view of the world meat situation the government in July indicated its intention

to resume meat rationing early in September. Despite the arrival of V-J Day in August, meat rationing came into effect for the second time in Canada on September 10, 1945. Effective July 9, 1945, the WPTB had previously announced the resumption of a permit system for live stock slaughtering, to assist in the control of domestic meat consumption.

As indicated in the foregoing brief history of wartime meat controls, restrictions were imposed on the domestic sale of pork products during the major part of the war period, with rationing of all meats in effect for a lesser period. Despite these controls, however, wartime meat consumption in Canada shows a substantial increase over the pre-war level.

TABLE 4.—CIVILIAN MEAT CONSUMPTION IN CANADA¹

	1935-39	1942	1943	1944
	lb.	lb.	lb.	lb.
Beef (bone-in).....	54.7	60.1	69.3	61.7
Pork (excl. lard).....	39.9	53.3	61.0	61.4
Veal.....	10.5	10.8	10.2	11.0
Mutton and lamb.....	5.6	5.0	4.6	4.8
Total.....	110.7	129.2	145.1	138.9

¹ As reported by Dominion Bureau of Statistics (excludes canned meat and offals).

The explanation of this apparent anomaly lies in the fact that in the initial period meat rationing was not highly restrictive, and although domestic distribution of pork products was under control for a considerable period, substitution of beef and other meats was possible. Also increased purchasing power in the hands of lower-income families enabled them to substantially increase their meat consumption over pre-war levels.

In view of the great expansion of the live stock industry in Canada in response to wartime demands, the question naturally arises—where do we go from here? Must production eventually return to pre-war levels or can part of the wartime increase be maintained. These are questions which at the moment are of rather vital concern to the entire live stock industry and meat trade.

Turning first to the possible future of bacon hog industry, it is not yet clear what volume of export bacon Canada may count on shipping in post-war years, although a figure of 450 million pounds has been suggested. On the supply side, the level of hog production which can be maintained depends on a number of factors including the supply and price of feed grains and labour, the attractiveness of competing products, and the general reaction of farmers to hog production prospects. From the demand side, while it does appear likely that the United Kingdom will continue as the chief export market for Canadian bacon, yet the quantities which she may be in a position to accept in turn depends on her home production policies, the opportunities for reciprocal trade, and numerous other factors. Moreover there will certainly be competition for Canadian bacon to meet on the British market.

One fact however has been proven in wartime—namely, that Wiltshire bacon can be produced and handled in Canada in large volume and of good quality, provided there is an adequate supply of feed grains and a favourable hog-feed margin. If Canadian bacon is to retain for itself an important place in world markets, it will be essential to maintain a proper balance between the live stock and grain growing industries. This may involve the passing on by the grain farmer of some of the benefits of mechanization, in the form of lower feed costs, and consequently hog production costs, to the live stock producer. In recent years, farm mechanization has tended to benefit the grain farmer more than the live stock producer.

With respect to the beef cattle industry, it is less evident than in the case of bacon, that the most promising outlet for an export surplus is overseas. True, wartime experience has indicated Canada's ability to freeze and ship carcass and boneless beef overseas in substantial quantities. However, this method of disposing of surplus beef does involve considerably greater costs of processing, storing, and shipping than the pre-war practice of selling surplus cattle on the hoof. Economically the beef industry in Canada, as now organized, is not in the best position to compete with several of the surplus-beef-producing countries in the Southern Hemisphere. Unless Canadian beef becomes better able to meet competition on the world market, cattle population will have to be adjusted downward considerably from present record wartime levels. It is possible of course, that a satisfactory overseas market might continue to develop for relatively limited quantities of super quality Canadian beef. This, however, does not offer a solution to two of the most important beef marketing problems, namely, that of marketing feeder cattle in the fall and heavy winter-fed steers in the spring. With a market for surplus beef now assured until at least the end of 1946, cattle producers have the rather unique opportunity to reduce inventories gradually without suffering the drastic price declines normally experienced at the peak of the production cycle.

Although wartime demands for meat and wool resulted in a considerable revival of interest in sheep raising, the possible problems of readjustment would seem to be less serious than in the case of cattle or hogs. Canada produces only a small part of her wool requirements and mutton and lamb make up only a small part of meat consumption. However, the sheep industry is certainly not without its economic and production problems, which must be surmounted if the wartime stimulus is not to be lost.

Inextricably bound up with the Canadian live stock industry, are developments in marketing, meat packing and processing, transportation and storage. Carcass grading, already the official system in the case of hogs and also proving successful for lambs, may be found equally practicable for beef. Processing and merchandising of meat products are constantly being improved, and storage and transportation facilities extended. Research in animal breeding and nutrition is moving forward. After a period of unprecedented wartime expansion the Canadian live stock industry should not be allowed to deteriorate, for it is just as basic to the agricultural economy as agriculture is to the welfare of the nation.

ECONOMIC LAND CLASSIFICATION AS APPLIED TO EASTERN CANADA¹

B. A. CAMPBELL

Historical Background:—In 1871 the Census of Agriculture reported that there were 354,000 acres of occupied land in Durham County of which 244,000 acres were classified as improved land. By 1911 occupied land in the county had increased to 363,000 acres while improved land totalled more than 273,000 acres. From 1911 to 1941 improved land in Durham County decreased 10 per cent, while crop land during the same thirty years showed a decrease of 24 per cent.

The population of Durham County has also shown remarkable changes and declined from a peak of 39,115 in 1861 to 25,215 in 1941. This change was almost entirely confined to the rural populations as the urban centres of Bowmanville and Port Hope showed relatively little population change during the eighty-year period.

While the statistics quoted here are for one county, they are indicative of changes in improved acreage and population that have taken place in many areas of Ontario and Quebec. The decline in crop land and population with a corresponding increase in unimproved land which is evident in Durham County

¹ An analysis of Studies being undertaken in Durham County, Ontario.

is a result of improper land management. During the middle nineteenth century a great deal of land was cleared and planted to crops that was not suited to intensive agricultural development. Many of the flood conditions of the Ganaraska River, which flows through Durham County and empties into Lake Ontario at Port Hope, have been attributed to this uncontrolled cutting of the forests. In commenting on the general relationship between forest and floods it is stated in the report "The Ganaraska Watershed"² that "The forest under all conditions cannot be said to prevent floods. Floods are caused chiefly by excessive precipitation and extremes of temperatures. The forest, however, generally has a decidedly mitigating influence on floods." The report goes on to give some of the effects of floods of the Ganaraska River and reports that "Since the middle of the last century the good people of Port Hope and the settlement lying immediately to the north have been visited periodically by disastrous floods. Each spring and in fact following a few days' heavy rain the fear of flood is uppermost in the minds of the townspeople. When severe floods do occur they always cause serious damage to property and merchants' stocks in the business section of the town."

In addition to damage caused by flooding the clearing of the forest had a second detrimental effect on the economy of the community in that once the trees were removed from the slopes of streams and rivers, the rate of erosion of the soil increased. This was true in Durham County and a great deal of land has been rendered useless for any purpose until measures are taken that will stop this soil erosion, while many gullies that have developed as a result of the erosion may never be utilized. This problem of erosion is not one that is confined to Durham County, but is one that is widespread in many sections of Ontario and Quebec. Farm leaders are realizing that in order to control and prevent many of the problems resulting from wind and water erosion, measures will have to be taken as soon as possible to offset the present trend. It was for this reason that the Ganaraska Watershed in Durham County, Ontario, was selected in 1942 for intensive study to determine plans for rehabilitation which might be extended to other areas. The work was carried out under the guidance of the Interdepartmental Committee on Conservation and Post-war Rehabilitation and the report published in 1944 dealt with the possibility of various phases of rehabilitation during the post-war period. A survey made by the Economics Division of the Department of Agriculture in the same area deals with two additional phases of the problem; the first of these deals with the Economics Aspects of Agriculture in the Ganaraska Watershed Area while the second section deals with the Land Classification in the two townships of Hope and Clarke in Durham County. It is intended at this time to deal only with that section of the Economics Division Report that deals with land classification in the two townships of Hope and Clarke.

Some Aspects of Land Classification.—Land Classification is in general a method of grading land on a basis of productivity and use capabilities. The land classes which have been outlined in the Land Use Report of the Economics Division take into consideration not only soil type and topography but also the present use of land, the crop yields, livestock production, conditions of buildings and roads and the returns that might be expected under the general system of farming carried on in the area. Many such land classification studies have been conducted in Western Canada under the Prairie Farm Rehabilitation Administration. In these studies the basis of classification has been on the ability of the land to produce wheat, which is the main, and in many cases, the only cash crop. Such a basis of classification is of course not feasible for eastern Canada and it thus became necessary to work out new technique bases on the type of agriculture predominating in the area under study.

² Richardson, A. H.—The Ganaraska Watershed, etc.

The two townships of Hope and Clarke are approximately 210 square miles in area and are situated on the north shore of Lake Ontario. A completed land class map of these two townships shows in detail the boundaries of each land class. The land classes as established on this map range from Land Class I³, which is the poorest or submarginal land, to Land Class V which is super-marginal or fairly intensively cropped land. Of the 138,800 acres in the two townships 41.9 per cent was classed in the submarginal Land Class I, while 14.4 per cent fell into Land Class II, 17.3 per cent into Land Class III, 20 per cent into Land Class IV and the remaining 6.4 per cent into Land Class V. In order to determine the type of agriculture carried on in each land class and to find the returns that might be expected from each class, 182 representative farms were selected in the two townships and were grouped on the basis of the predominating land class to be found on each of the farms.

Farm Economy in Different Land Classes in Hope and Clarke.—An analysis of the farm setup of each land class is shown in Table I. It may be noted from this table that in general the farms lying in the better land classes were smaller in size. The average size of farm in Land Class I was 143.8 acres while those in Land Class V averaged 123.9 acres. In Land Class I, however, only 37 per cent of the total land was classified as crop land compared with 55 per cent for Land Class III and 66 per cent for Land Class V.

The area in woodland, improved and unimproved pasture land was greater in the poorer land classes than in the better land classes.

TABLE I.—UTILIZATION OF LAND ON THE BASIS OF LAND CLASSES IN HOPE AND CLARKE TOWNSHIPS, DURHAM COUNTY, ONTARIO

Land Class	I	II	III	IV	V	All Classes
No. of farms.....	25 acres	32 acres	41 acres	66 acres	18 acres	182 acres
Crop Land.....	53.8	64.2	80.0	74.3	81.9	71.7
Pasture.....	20.1	29.8	20.4	18.7	13.0	20.6
Other Improved.....	4.5	2.7	5.0	4.7	4.0	4.6
Total improved.....	78.4	96.7	105.4	97.7	98.8	96.7
Woodland.....	19.6	21.8	11.5	10.5	8.9	13.8
Unimproved pasture.....	45.2	28.9	27.5	19.8	16.2	26.3
Swamp.....	0.6	2.3	0.1	0.2	.....	0.6
Total unimproved.....	65.4	53.1	39.1	30.5	25.1	40.7
Total.....	143.8	49.8	144.5	128.2	123.9	137.4
Percentage of Land in:—	%	%	%	%	%	%
Crop Land.....	37.4	42.9	55.4	57.9	66.1	52.2
Improved.....	54.5	64.6	72.9	76.2	79.7	70.4
Woodland.....	13.6	14.5	8.0	8.2	7.2	10.0

As crop yields were one basis for land classification, an analysis of average yields on farms in the different land classes showed that the crop index⁴ increased as the land classes improved. However, when the yields of individual crops were analysed it was evident that while grain yields increased steadily

³ Land Class III is considered marginal land and will under average conditions yield the farmer only enough to pay the upkeep of land and buildings and hired man's wages for the operator.

⁴ Crop index is a measure by which crop yields per acre for all crops are put on a common basis. Average crop yields for Durham County had an index of 100. A crop index of more than 100 represents better than average yields while those less than 100 represent yields that are below average.

as the land class improved, yields of such crops as alfalfa, beans, corn and potatoes did not show significant changes.

The area planted to wheat, oats, and mixed grain is greater on the better land while rye and buckwheat acreage showed a decided decrease as the land class improved. More alfalfa was grown on Land Class IV and V than on the poorer types but the potato acreage per farm declined as the land class improved. Potatoes are grown as a cash crop on the light lands of Land Class I and II whereas, in Land Class IV and V where soil is heavier, potatoes are grown for the most part for home consumption. Commercial orchards were confined almost entirely to Land Class V and the farms in this group averaged 6.3 acres in fruits and vegetables.

An analysis of the number of livestock kept on farms in different land classes showed that the number of animal units⁵ increased from an average 18.27 animal units per farm on Land Class IV but declined to 26.49 on farms located on Land Class V. This decrease in the number of animal units in the top land class is accounted for by the trend away from livestock production on the better land due to the utilization of land for such intensive crops as orchards, vegetables and canning crops and also by the fact that the farms were smaller in size.

TABLE 2.—AVERAGE RECEIPTS, EXPENSES AND RETURNS PER FARM BY LAND CLASSES IN HOPE AND CLARKE TOWNSHIPS, DURHAM COUNTY, 1940

Land Classes	I	II	III	IV	V	Classes
Number of farms.....	25 \$	32 \$	41 \$	66 \$	18 \$	182 \$
Cash returns.....	274	837	1,061	1,599	2,153	1,272
Cash expenditures (current plus capital).....	317	460	639	1,084	1,495	811
Net cash income.....	357	377	422	515	658	461
Cash returns.....	674	837	1,061	1,599	2,153	1,272
Current expenditures.....	231	329	512	741	1,072	581
Cash income (not including capital expenditures).....	443	508	549	852	1,081	691
Outside income.....	111	43	35	84	23	62
Cash income from farm.....	332	465	514	768	1,068	629
Cash income from farm per 100 acres Land.....	231	310	357	599	861	458

In any analysis of farm business the most important feature is the returns that are realized. The average receipts, expenses and returns for farms located in each land class are shown in Table 2.

The net cash income from farms located on Land Class I totalled only \$357 per year. This figure represents the total cash income after all current and capital expenses for the year are paid and must be used to take care of interest on borrowed capital as well as all family living expenses. The net cash income increased from an average of \$351 per farm on Land Class I to an average of \$650 for the 18 farms located on Land Class V. The cash income from the farm per 100 acres of land increased from an average \$231 per annum for farms on Land Class I to an average \$861 per annum for farms on Land Class V.

⁵ The term animal unit is for purposes of comparing different classes of animals and to compute the total amount of livestock on farms on a cow equivalent basis.

TABLE 3.—PERCENTAGE RECEIPTS FROM EACH GROUP ENTERPRISE IN HOPE AND CLARKE TOWNSHIPS, DURHAM COUNTY, 1940

	I	II	III	IV	V
Livestock sales.....	47.5	53.3	58.8	55.1	42.1
Livestock products.....	23.3	28.8	29.6	27.3	43.2
Crop sales.....	9.0	11.9	8.1	12.1	13.0
Other (including outside income).....	20.2	6.0	3.5	5.4	1.7
Total.....	100.0	100.0	100.0	100.0	100.0

In most land class groups livestock sales were the most important source of income (Table 3), although in Land Class V receipts from livestock products and livestock were of equal importance. Returns from livestock per animal unit were higher in Land Class V because many farmers located on this land sent their milk to fluid market while those in other land classes generally shipped cream. In Land Class I, 20 per cent of income was made up from work performed off the farm and by the sale of forest products.

Conditions of Buildings in Hope and Clarke Townships.—Size and condition of buildings is considered as one indication of the productivity of the land on which the buildings are located. Therefore, the barns and houses in the two townships of Hope and Clarke were classified on the basis of their condition into five different classes ranging from poor to excellent. A summary of the type of buildings to be found in the two townships is shown in Table 4.

TABLE 4.—CONDITIONS OF BARNs AND HOUSES, HOPE AND CLARKE TOWNSHIPS, 1940.

Condition of Buildings	Houses		Barns		Total	
	No.	%	No.	%	No.	%
Excellent.....	17	1.8	17	1.7	34	1.8
Good.....	103	11.2	59	6.0	162	8.5
Fair to Good.....	380	41.3	325	33.1	705	37.1
Poor to Fair.....	283	30.7	438	44.7	721	37.9
Fair.....	138	15.0	142	14.5	280	14.7
Total occupied.....	921	100.0	981	100.0	1,902	100.0
Unoccupied but usable.....	50		43		93	
Total usable.....	971		1,024		1,995	
Abandoned not usable.....	29		28		57	

Of the 921 houses in the two townships which were occupied, 45 per cent were classified as poor or poor to fair while only 13.0 per cent could be classed as good or excellent. The situation with respect to the barns was more significant with 59.2 per cent of all barns in the township falling into the two low groups. In addition to the occupied buildings reported, there were some 93 usable buildings and 57 unusable buildings recorded in the two townships.

Conditions of Roads.—One phase of this study dealt with the conditions of roads in the different land classes and it was found that land classes were related very closely to the road type. An analysis of road conditions revealed that the better land classes had the highest percentage of good roads.

Education Costs Related to Land Classes.—Part of the Land Use Survey dealt with all aspects of education in Hope and Clarke Townships and an attempt was made to relate data on receipts and expenditures per school section⁶ to the predominating land class to be found in each school section. It

⁶ Sometimes known as school district.

is of course not expected that all school sections can bear their share of the cost of education but is significant to note the range in the amount paid in taxes and the amount received back for education. (Table 5)

Township taxes, including general school taxes paid by farmers in the thirty-three one-room-school sections of Hope and Clarke Townships totalled \$29,922 in 1941. Of this total 19,800 or 66 per cent was paid back to the school sections as township grants. School sections predominantly in Land Class I with some land in Class II (Group I of Table 5) paid \$2,838 in township taxes and received \$3,000 from the township for education alone or 5·7 per cent more than they paid in. The three groups predominantly on Land Class I or II were not able to pay their way for education grants and the other school sections had to offset this inability to pay for education on these land classes. Group 8 or school sections predominantly in Land Class V paid \$3,170 in township taxes and only 36 per cent of this amount was returned to these school sections for education grants.

TABLE 5.—PREDOMINANT LAND CLASSIFICATION OF SCHOOL SECTIONS RELATED TO TAXES PAID AND EDUCATION GRANTS RECEIVED FROM TOWNSHIPS OF HOPE AND CLARKE

—		Assess- ment	Township Taxes including General School	Township Grants to S.S.	% Taxes Paid Re- turned for Education to S.S.
Predominant	Other Land—	(000 omitted)	\$	\$	\$
1. I	II	294.5	2,837.81	3,000.00	105.7
2. I	III or IV	647.2	4,801.24	4,800.00	100.0
3. II	I	231.7	2,323.10	1,000.00	77.5
4. III	I	293.0	2,777.90	1,800.00	64.8
5. III	IV or V	256.1	2,227.41	1,200.00	53.9
6. IV	I and II	297.8	2,765.54	1,800.00	64.9
7. IV	III or V	785.1	6,286.31	3,000.00	47.7
8. V		355.7	3,170.05	1,000.00	37.9
9. Unclassified		326.1	2,733.01	1,200.00	43.9
Average or Total		3,487.2	29,922.27	19,800.00	66.2

Economic Land Use Surveys as a Guide to Agricultural Planning.—The land classification which has been mapped for Hope and Clarke Townships is necessary for any program of planned agriculture. While the main “Ganaraska Watershed” report deals with many phases of rehabilitation and conservation it does not attempt to outline plans for farm lands. The report on economic land use shows farmers what returns might be expected from each land class. It is then up to the farmers concerned and the municipal, provincial, and dominion government to make decisions as to whether or not money should be spent on public utilities, roads, education, etc., on submarginal sections where, under present methods of farming, the operator can not even make hired man’s wages. With the development of commercial agriculture and the need for increased efficiency of farm use of machinery, submarginal farmers on so-called self-sufficient farms are going to find it more and more difficult to maintain even their present standards of living. Over a period of time this will result in a further reduction of population in rural areas. How much better it would be for these farmers to increase their returns by improved land management so that they would be able to compete with the better farmers and enjoy a higher living standard.

Land Classification is necessary for laying the foundation of soil conservation and agricultural planning in considering the future development of Canadian agriculture.

MARKETING SURVEY METHODS ADAPTED TO COMMUNITY PLANNING

PHIL J. THAIR

The need for balance between the interests of the urban and rural dweller has brought about an alliance between the community planner and the agriculturist. In the past, unrestricted development of both urban and rural areas has resulted in great losses. Urban communities are dependent on rural areas for the farm products they wish to consume and the rural dweller is, in general, dependent on the urban centres for a market for his surplus produce. It is the interdependence of town and country in relation to agricultural produce that constituted the basis for the following enquiry.

To provide a measure of guidance and leadership in the current interest in town and community planning, the Directorate of Economic Research of the Department of Reconstruction together with the National Housing Administration of the Department of Finance undertook a type study—the Eastern Ontario town of Smiths Falls being selected as a sample. It was planned that one aspect of the study would deal with the agricultural production of the surrounding rural district, or “trading area”, of Smiths Falls in relation to the fresh food requirements of the town and surrounding country.

With this in mind the Economics Division, Marketing Service, of the Department of Agriculture, was invited to participate in the effort and to assess quantitatively and qualitatively the economic interdependence of the agricultural area surrounding the Eastern Canadian town of Smiths Falls.

The rural district surrounding Smiths Falls was termed the “trading area” and was considered to include the farmers who did the bulk of their business in Smiths Falls. The determination of the boundary of the trading area was a project that developed as the survey progressed. A tentative boundary was suggested at the beginning of the survey from a study made of bank accounts in Smiths Falls and surrounding towns. This boundary was used as a starting point and was modified from time to time as a result of interviews with business men and farmers situated within and without the limits of the tentative boundary. Modifications resulted from road and highway conditions, distances from competing towns, facilities in competing towns, and natural barriers. It should be borne in mind that any such boundary is elastic to some extent. A single boundary as developed above cannot show the true area for all commodities. Moreover, farmers living near to the line will, of course, do business in more than one place to a greater or lesser degree. In spite of these shortcomings the trading area boundary will give a general picture of the rural area that can be considered in direct relationship with the town.

From the point of view of the agriculturist the survey resolved itself into three main aspects or avenues of approach. The first of these considered the demand and supply of agricultural products in Smiths Falls and surrounding district or trading area. For this it was necessary to determine the amounts of various farm products needed to meet the local demand, and then to determine to what extent these requirements were met by produce of local origin. Amounts of the various products brought into the town and amounts of surplus products shipped out from the area were also included in the survey.

No blueprint can be established for marketing surveys that would be applicable in detail to all towns and cities. Each town is different and the procedure has to be varied accordingly. In general, however, certain broad principles serve as useful guides. One of the chief aims is to obtain a record of all inward and outward traffic in the various agricultural products, such as fresh fruits and vegetables, livestock and meat, feed and grains, dairy products, poultry products, maple syrup, etc. Therefore it would seem reasonable to assume that this information could be obtained with greatest facility at points through which the various products are passing in greatest concentration. However, this principle must frequently be modified according to local condi-

tions. Compromises must continually be made between the need for complete and detailed information on the one hand, and the staff and time available on the other.

The information obtained on the movement of produce in this area, and on which the supply and demand analysis was based, may be classified under the following headings:

Local.—Produce grown in the trading area and marketed in Smiths Falls.

Outward.—Produce grown in the trading area and marketed outside the area.

Inward.—Produce grown outside the trading area and received and sold at Smiths Falls.

From the above definitions the total marketed production of the area for any product can be calculated by the summation of "Local" and "Outward." The consumption or trade requirements can be determined by the addition of "Local" and "Inward."

To determine whether the trading area as a whole was a surplus or a deficit area for the various products, inward shipments were subtracted from outward shipments. A surplus indicates that the area produced more of a certain product than it consumed; and a deficit that the area produced none, or not enough of a product for its own use, thus necessitating shipments inward from outside.

From the data available it was also possible to calculate an Adequacy Index, a quantitative measure of the extent to which the total marketed production was able to meet the amount of the Smiths Falls trade requirements. The Adequacy Index represented the total amount of local produce marketed as a percentage of the town's trade requirements.

A study of the growers' public market in Smiths Falls constituted the second aspect of the marketing survey. This included the assembling of such information as the public market by-laws, the number of farmers patronizing the market, the amounts of farm produce traded on the market, and the extent to which the produce sold on the market satisfied the local requirements. Closely related to this was a study of the quantities of local produce marketed in the town but not through the public market. It was found that the farmers selling directly to householders and retailers were too numerous to interview individually so instead a sample survey was made of the householders and retailers themselves.

An analysis was also made of the opinions, criticisms, and suggested improvements that were given by the market patrons, retailers and wholesalers regarding the marketing of local produce at the market place.

The third aspect of the study was an assessment of the general agricultural conditions and potentialities throughout the trading area. Natural or physical factors, being least subject to human modification or control, may be considered basic, and consist of the geological background, climate, vegetation and soil. The degree to which each of these is favourable or unfavourable will determine productivity. Finally the product of these natural factors is modified by human and economic forces, such as accessibility, transportation, juxtaposition to markets, and differential price levels. These natural and economic factors will, in combination indicate land use.

On the basis of the survey of the actual demand and supply position of the community together with a study of the agricultural and economic conditions prevailing, conclusions were drawn regarding the extent to which adaptations have been made to these natural and economic factors. Decisions were expressed as to whether or not such farm business relationships as the average size of farm, average capital investment and distribution, kinds and sizes of the various farm enterprises, and the types of produce raised in the country were in harmony with the prevailing natural and economic factors, in the light of the market requirements of the town.

POST WAR TRENDS IN FARM MACHINERY PURCHASES IN EASTERN CANADA

J. COKE and A. GOSSELIN

Canadian farms at the outbreak of the war were undersupplied with farm machinery and equipment. This situation was partly due to the low farm incomes that prevailed during the depression of the thirties causing most farmers to curtail their purchases of new equipment. From September, 1939, labour and material were diverted to war needs and the reduced production of farm machinery was not sufficient to supply a rapidly increasing demand for all kinds of farm equipment required for the largest agricultural production possible.

The situation became somewhat alarming in 1944. The Economics Division of the Dominion Department of Agriculture was requested by the National Committee on Agricultural Engineering to collect information on the machinery situation throughout Canada.¹ This survey was conducted during the fall and winter of 1944-45 in the Prairie Provinces and during the winter and spring of 1945 in British Columbia and Eastern Canada. The following report is a brief summary of the survey made in Nova Scotia, New Brunswick and Ontario with the assistance of the Extension Services in these Provinces who collected the data from farmers.

The objectives of this survey were:

- (a) To estimate the number of various machines and to determine the type and size of these machines actually in use on farms.
- (b) To appraise the number of farm machines wanted for the five year period 1945-1949, but particularly in 1945 and 1946 with special emphasis on trends and changes occurring as to types and sizes of various machines.
- (c) To determine how long machines are used by farmers, and the variation in the period of use that occurs in different areas and with different types of farming.
- (d) To provide some information which would aid in the study of the whole problem of farm machinery utilization.

Number of Machines on Farms.—In this survey an attempt was made to secure an estimate of the number of the machines most frequently used on farms. In taking the decennial census it has been customary to record the amount of capital in machinery and equipment on each farm without recording the number of various machines except for tractors, combines, threshing machines, gas engines, electric motors, motor cars and trucks. It is therefore difficult to know what the actual situation is in this respect and to register the changes which occur from one census year to another in the number of machines as well as the changes and trends in the type and size of various machines.

While the accuracy of the data secured in this survey may be questioned on account of the relatively small number of records taken in relation to the total number of farms it may be said that these figures are not in most cases too far out of line, and may serve as a guide in the analysis of the situation. They represent the farmers' estimate of what he plans to do.

Number of Farm Machines Wanted.—This information was needed in order to distribute as equitably as possible in 1945 and 1946 the short supply of many farm machines and to fill the gap between the supply and the unfilled demand in previous years.

Tractors.—The general shortage of farm labour and the strong demand for an unlimited production of almost every kind of agricultural commodity accelerated the rate of mechanization and use of power on farms. Farm tractors, being one of the most efficient means of increasing the output per man, were in great demand. The equipment suitable to tractor operation also

¹ The results of this survey are still incomplete. An earlier article entitled "Farm Machinery Trends in Saskatchewan" appeared in the August, 1945 issue of the *Economic Annalist* by M. E. Andal and J. D. Neilson.

ESTIMATED PERCENTAGE OF MACHINES WANTED IN RELATION DURING THE PERIOD 1945-49 TO NUMBERS ON FARMS IN NOVA SCOTIA, NEW BRUNSWICK AND ONTARIO

Machines	Nova Scotia	New Brunswick	Ontario
Tractor.....	75.6	109.2	37.9
Walking plough.....	15.1	12.0	3.6
Gang plough.....	12.1	14.8	4.0
Tractor plough.....	38.0	26.1	20.2
Disc harrow.....	22.8	20.4	17.4
Spring tooth harrow.....	21.3	23.7	.....
Spike tooth harrow.....	10.7	8.7	7.1
Field cultivator.....	28.7	24.0	15.4
Row crop cultivator.....	32.3	22.7	11.1
Roller.....	11.8	19.0	4.5
Grain drill plain.....	18.1	25.8	8.3
Grain drill fertilizer.....	25.6	31.8	20.8
Corn planter.....	.....	.....	17.2
Potato planter.....	62.3	39.8	13.7
Mower.....	26.3	29.6	15.2
Hayrake.....	44.2	29.9	9.4
Tedder.....	25.7	11.5	2.3
Loader.....	35.5	59.6	27.0
Grain binder.....	23.1	38.5	14.4
Combine.....	.....	.....	59.0
Thresher.....	15.9	20.1	12.7
Corn binder.....	.....	.....	17.3
Silo filler.....	14.1	166.3	15.4
Potato digger.....	32.2	26.0	13.1
Potato grader.....	4.9	36.1	6.3
Grain grinder.....	11.6	19.2	12.3
Grain cleaner.....	1.6	4.9	3.4
Manure spreader.....	47.0	56.1	27.2
Fertilizer spreader.....	38.2	50.3	30.6
Potato sprayer.....	45.6	38.6	5.4
Potato duster.....	23.2	9.2	.....
Orchard sprayer.....	31.6	122.2	27.7
Orchard duster.....	.....	.....	23.8
Truck.....	82.8	102.3	20.8
Car.....	52.3	14.2	8.3
Wagon and dump cart.....	10.6	5.6	5.3
Trailer.....	15.0	33.6	4.7
Sleigh.....	6.1	2.1	3.1
Cream separator.....	12.4	10.8	6.0
Milking machine.....	58.4	65.7	14.2

experienced a good market in all sections of the country. The relative increase in number of tractors was particularly large in the sections where relatively few tractors were in use before the war. Since the supply of tractors was sufficient to fill only a portion of the demand, a large number of farmers built home made tractors by converting any motor vehicle which would fit the purpose. This partly explains the discrepancy which may exist between the number of tractors on farms as recorded in the 1941 census plus the tractor sales recorded since. It may also explain the large number of tractors wanted in the next few years, for once a farmer finds that his output is materially increased by the use of a tractor it is likely that he will buy a new one to replace a worn out or home made tractor which may not be entirely satisfactory.

The three-plough or medium size tractor was the most common size in use and in demand on the Nova Scotia farms. In New Brunswick the two-plough or small size tractor was the most common in use but the number of farmers who intend to buy a medium size tractor was larger than those who wanted a small one. In Ontario the two-plough or small tractor was the most common size in use and also most in demand. The predominance of the small tractor in New Brunswick and Ontario is partly explained by the fact that the tractor is no longer used exclusively for ploughing and discing as was the case several years ago but it is used for all kinds of work; row crop cultivation, mowing hay, hauling on roadways and stationary work. For such a diversity of operation

requiring only a limited amount of power there would be, in many instances, an unnecessary loss of power if a large and heavy tractor was used. Therefore, on large farms two small or medium size tractors are often more suitable than one large machine.

The four-wheel tractor on rubber was found to be the most common type in use on farms. As to the tractors needed, the four wheel tractor on rubber is also the predominant type desired. The row crop tractor on rubber in use on farms ranks second. The proportion of farmers who intend to buy a row crop tractor instead of a four wheel tractor is increasing, particularly in Ontario.

Tillage Implements.—The walking plow is found on most farms, even on farms with tractors. In Nova Scotia and New Brunswick the disc harrow and the spring tooth harrow were found in larger numbers than the field cultivator on wheels but the percentage of farmers who wanted to buy a field cultivator is increasing. The single disc harrow is by far the most common type of disc harrow in use on farms but a larger percentage of farmers intended to buy a tandem disc harrow. In Ontario, while the disc harrow was found on a larger number of farms than the field cultivator, the percentage of farmers who wanted to buy a field cultivator was about the same as those who wanted to buy a disc harrow. The number of farms reported using the single disc harrow was approximately the same as those using the tandem disc harrow,

ESTIMATED TOTAL LIFE OF VARIOUS FARM MACHINES IN NOVA SCOTIA, NEW BRUNSWICK AND ONTARIO

Machines	Nova Scotia	New Brunswick	Ontario
	Average total life years	Average total life years	Average total life years
Tractor.....	12.8	14.7	14.5
Walking plough.....	20.8	20.0	23.1
Gang plough.....	24.6	23.2	24.5
Tractor plough.....	15.0	13.9	16.2
Disc harrow.....	21.0	25.3	29.7
Spring tooth harrow.....	22.3	18.2	.....
Spike tooth harrow.....	23.7	29.7	28.8
Field cultivator.....	12.4	19.3	23.1
Row crop cultivator.....	19.9	22.1	20.1
Roller.....	25.2	28.7	34.3
Grain drill plain.....	31.7	29.3	30.1
Grain drill fertilizer.....	26.9	25.2	22.6
Corn planter.....	.....	.....	23.9
Potato planter.....	21.2	25.1	20.9
Mower.....	21.5	24.4	23.0
Hayrake.....	23.3	24.8	24.8
Tedder.....	25.9	32.9	28.5
Loader.....	21.4	26.0	27.7
Grain binder.....	24.4	28.9	26.5
Combine.....	.....	.....	11.1
Thresher.....	25.1	30.3	27.5
Corn binder.....	.....	24.7	24.7
Silo filler.....	23.6	28.3	21.8
Potato digger.....	21.9	22.8	23.8
Potato grader.....	20.4	19.1	20.7
Grain grinder.....	23.9	29.6	19.5
Grain cleaner.....	37.7	35.6	39.0
Manure spreader.....	21.4	23.5	21.5
Fertilizer spreader.....	21.6	19.9	17.3
Potato sprayer.....	20.0	25.4	17.9
Potato duster.....	16.6	19.6	.....
Orchard sprayer.....	12.4	16.2	17.6
Truck.....	9.2	10.6	14.1
Car.....	11.2	13.7	14.6
Wagon and dump cart.....	28.4	21.0	28.9
Trailer.....	11.3	14.0	16.0
Sleigh.....	22.1	24.4	29.3
Cream separator.....	19.7	19.8	19.0
Milking machine.....	14.9	16.1	16.8

but there was a larger percentage of farmers who wanted the latter. No doubt the tandem type will gain in favour with a more general use of tractors. While the number of spring tooth harrows was not recorded it is widely used on Ontario farms.

Seeding Equipment.—The grain drill with fertilizer distributor was found in greater numbers than the plain grain drill in Nova Scotia and the percentage of farmers who wanted to buy a combined grain drill and fertilizer distributor was much higher than those who wanted a plain grain drill. In New Brunswick the two types of grain drill wanted were about the same in number as those already in use. In Ontario there were twice as many plain grain drills as combined grain drills in use but the number of combined grain drills wanted was larger than the plain type.

Harvesting Equipment.—Besides standard equipment for haying such as a mower and rake which are found on most farms, hay loaders and tedders are now found on a fairly large number of farms in all provinces. In general, farmers wanted to buy more of these implements.

In Ontario the grain combine was wanted in fairly large numbers.

Silo fillers and ensilage cutters were not found in large numbers on Nova Scotia and New Brunswick farms but a large percentage of farmers intended to buy silo fillers particularly in New Brunswick.

Conclusions.—Farm machinery will be in great demand during the next few years. This is due to the fact that during the war years the need for new machinery could not be satisfied, and worn out machinery could not be replaced because of an insufficient supply of new equipment. The data secured in this survey show that, for the five-year period 1945-1949, the total number of all kinds of machines wanted, amounted to 25 per cent of all machines on farms in Nova Scotia, 22 per cent in New Brunswick, and 12 per cent in Ontario.

CREDIT UNIONS IN CANADA, 1944

J. E. O'MEARA

Thirty years ago there were 91 credit unions in Canada with 23,000 members and \$2 million in assets. All of these were concentrated in the province of Quebec. In 1944, credit unions were in operation in every province and had a membership of nearly half a million with assets of over \$92 million. This progress has been steady throughout the years and 1944 was no exception.

Due to unavoidable delay in receipt of data, information on this subject was not included in the annual report on co-operation in Canada for the year 1944. At the time of publication of this latter report it was announced that a supplementary report on credit unions would be issued.

Total number of credit unions in Canada in 1944 was 2,006, an increase of 12 per cent over 1943 (see table). Membership increased by 27 per cent and actual loans granted during 1944 increased by 125 per cent. Assets, shares and deposits also increased but not nearly to the extent that loans did. It is evident that credit unions are keeping their funds in circulation and the credit unions are thus fulfilling their function as providers of funds for "provident and productive purposes." Credit unions made available credit to the extent of \$36 million to nearly 500,000 Canadians in 1944. Greatest increase in loans granted was made by the "Caisses Populaires" in Quebec, followed by Manitoba, Saskatchewan and Alberta in that order. Every province participated in the general increase.

Nationally, no change was noted in the average share investment per member which remained at \$27. Average equity per member in assets increased from \$185 in 1943 to \$193 in 1944.

1945 Developments.—Other than minor amendments to provincial acts there were no significant changes in credit union legislation during 1945. Most

important development during the past year was the establishment of a Canadian Federation of Credit Unions in November. This Federation, at the moment, consists of representatives of each provincial league. New Brunswick and Quebec have two representatives each. At the first meeting which was held at Winnipeg, Manitoba, in November, a president, vice-president and secretary were elected and each province named its representative to the federation.

In May of this year it is expected that Canada will be elected to a vice-presidential seat on the national board of directors of the Credit Union National Association. Following this a Canadian office is to be opened for the co-ordination of credit union efforts in Canada. The Canadian Federation, through this office, will then be the national headquarters of all credit unions in Canada.

Part II of the Report of the Royal Commission on Co-operatives recommended the continuance of tax exemption on the income of credit unions. It was also recommended: "that Section 4 (g) of the Income War Tax Act be amended to make it clear—

- (a) that it includes federations whose membership may comprise other credit unions, co-operative associations, parishes, school districts and other similar bodies.
- (b) that organizations excepted thereunder must derive their revenues primarily from loans made to members."

CREDIT UNIONS IN CANADA

STATISTICAL SUMMARY BY PROVINCES FOR 1944 FINANCIAL YEAR

Province	Credit Unions	Members	Assets	Shares	Deposit	Loans granted in last financial year	Loans granted since inception
	No.	No.	\$	\$	\$	\$	\$
Prince Edward Island.....	50	6,880	334,757	234,207	84,317	197,657	831,497
Nova Scotia.....	213	31,796	2,026,798	1,532,987	58,325	1,321,283	8,041,194
New Brunswick.....	138	27,558	1,744,262	1,596,680	59,995	1,265,986	4,482,131
Quebec—							
Desjardins ¹	852	300,183	77,874,334	4,309,959	71,218,798	25,000,000	170,683,803
Other.....	10	2,200	327,151	85,577	78,482	176,505	614,928
Ontario.....	220	44,840	4,998,583	2,042,471	2,445,575	3,466,481	19,986,384
Manitoba.....	93	13,841	901,933	345,540	498,040	893,473	2,028,258
Saskatchewan.....	163	21,088	2,445,555	1,301,684	1,006,572	1,635,995	3,571,645
Alberta.....	149	14,790	972,484	711,232	203,082	1,113,653	2,559,244
British Columbia.....	118	15,665	948,583	851,639	41,537	1,038,896	2,071,580
Canada 1944.....	2,006	474,841	92,574,440	13,011,976	75,694,723	36,109,929	214,870,664
Canada 1943.....	1,780	374,069	69,219,654	10,057,890	55,522,985	16,946,292	154,997,037

¹ In the Quebec Desjardins figures assets of \$14,258,196 in caisses regionales not included.

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THE ECONOMIC SITUATION

The present unfavourable world food supply position is the result of drought, lack of fertilizer and dislocations of war. Many countries formerly on a wheat export basis now require imports. Larger shipments of wheat are required by many countries which import regularly. In addition, surplus stocks in Australia and Argentina are low.

This serious situation has received world recognition and action is being taken to make available additional quantities of food for famine stricken nations. Canada too has adopted a positive program to increase shipments of wheat and other grains.

A reduction in the supply of wheat available to millers and distillers may provide as much as 2.5 million bushels of wheat for export during the next six months. A reduction of inventories of dealers and consumers will provide additional quantities for shipment without seriously disturbing the supply of flour available to the Canadian people. In order to encourage immediate delivery of farm stored wheat, cash settlement may be taken in 1946, 1947 or 1948, such income to be reported in the year received for income tax purposes.

Rail priorities have been granted for the movement of export wheat and steps have been taken to secure additional railway cars which can be made available to speed up the loading of vessels in port.

In addition, the people of Canada are urged to reduce food waste to a minimum and, wherever possible, establish home gardens to add to the total food supply. Successful food conservation will result in even greater quantities of wheat being available for export during the present crisis.

Food Agreements.—The export demand for certain agricultural products was clarified for the next three years, at least, when the Minister of Agriculture announced the results of negotiations with the British Ministry of Food. During this period, the United Kingdom requires the maximum quantity of meat which Canada can supply. Heavy shipments of egg and milk products are also required. This continued strong demand prevails at prices equal to or higher than those effective during the past year.

The British Ministry of Food will accept delivery of all the bacon and ham which Canada can provide in 1946, 1947 and 1948. It was agreed that the present contract for the calendar year 1946 should be extended to cover the import of a minimum of 350 million pounds into the United Kingdom in 1947 and 400 million pounds in 1948. Further negotiations are planned to provide for 1949. The price of Grade A Wiltshires was increased from \$22.50 per 100 pounds f.o.b. seaboard to \$25.00 per 100 pounds, same basis, to be effective from April 1, 1946, to December 31, 1947. Prices for later agreements are to be established but, in 1948, it will not be less than for the 1944-45 agreement. The United Kingdom will accept delivery of all the hog casings for use in sausage manufacture which Canada can supply up to 1948.

ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Living Costs and Production Indexes Computed by Dominion Bureau of Statistics.

Year	Wholesale Prices 1926=100				Cost of Living 1935-39=100		Commodities and Services used by Farmers, 1935-39=100		Produc- tion
	All com- modities	Farm products	Field products	Animal products	Urban Living Costs	Farm Living Costs	Eight Factors	Eleven Factors	Physical volume of business
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1913.....	64.0	64.1	56.4	77.0	79.7	79.6	.....	.....	.....
1914.....	65.5	70.2	65.4	78.3	80.0	82.0	.....	.....	.....
1915.....	70.4	77.9	76.9	79.5	81.6	86.3	.....	.....	.....
1916.....	84.3	89.8	88.8	91.4	88.3	93.6	.....	.....	.....
1917.....	114.3	128.5	134.5	118.4	104.5	111.6	.....	.....	.....
1918.....	127.4	132.6	132.0	136.6	118.3	131.4	.....	.....	.....
1919.....	134.0	146.7	142.6	153.5	130.0	143.0	.....	.....	62.3
1920.....	155.9	160.6	166.5	150.8	150.5	170.7	.....	.....	65.9
1921.....	110.0	103.7	100.3	109.5	132.5	139.5	.....	.....	58.1
1922.....	97.3	88.0	81.4	99.0	121.3	127.5	126.9	133.2	69.1
1923.....	98.0	81.5	73.3	95.1	121.7	127.9	118.7	128.7	74.7
1924.....	99.4	88.1	82.7	97.2	119.5	125.1	122.5	132.6	73.9
1925.....	102.6	101.0	98.2	105.6	120.6	123.6	124.3	131.8	79.4
1926.....	100.0	100.0	100.0	100.0	121.8	120.9	120.6	129.3	87.3
1927.....	97.7	102.1	99.9	105.7	119.9	119.5	120.9	130.1	92.7
1928.....	96.4	100.7	92.6	114.3	120.5	118.3	119.4	128.2	102.4
1929.....	95.6	100.8	93.8	112.5	121.7	117.4	118.4	127.5	109.6
1930.....	86.6	82.3	70.0	102.9	120.8	113.7	105.7	116.3	95.6
1931.....	72.1	56.3	43.6	77.6	109.1	103.7	91.8	100.8	81.7
1932.....	66.7	48.4	41.1	60.7	99.0	97.7	88.7	93.4	68.7
1933.....	67.1	51.0	54.8	59.7	94.4	95.7	88.4	90.0	69.6
1934.....	71.6	59.0	53.8	67.7	95.7	97.8	96.8	96.0	82.2
1935.....	72.1	63.5	57.3	74.0	96.2	97.9	95.6	96.0	89.4
1936.....	74.6	69.4	65.8	75.3	98.1	98.3	98.4	98.0	98.0
1937.....	84.6	87.1	88.3	85.0	101.2	102.9	108.5	105.4	107.2
1938.....	78.6	73.6	69.0	81.3	102.2	102.0	101.1	101.5	98.6
1939.....	75.4	64.3	54.2	81.2	101.5	99.5	96.1	99.1	106.9
1940.....	82.9	67.1	56.0	85.8	105.6	108.6	102.3	105.7	124.3
1941.....	89.9	71.2	56.5	95.9	111.7	114.2	108.2	114.1	165.0
1942.....	95.6	82.5	66.5	109.2	117.0	119.2	119.7	123.0	202.2
1943.....	99.9	95.9	81.5	120.0	118.4	121.7	122.4	136.0	235.9
1944.....	102.5	102.9	91.8	121.3	118.9	122.8	125.7	138.8	236.3
1945.....	103.1	105.4	94.8	123.0	119.5	123.2	125.5	141.2	212.5
1945									
Jan.....	102.8	104.4	93.5	122.7	119.0	122.8	125.3	137.4	228.8
Feb.....	102.9	104.6	93.8	122.7	118.6	.....	.....	.....	216.7
Mar.....	103.0	105.1	94.0	123.6	118.7	.....	.....	.....	225.2
April.....	103.4	105.3	94.0	124.2	118.7	123.0	125.5	142.0	232.2
May.....	103.0	104.6	94.8	121.1	119.0	.....	.....	.....	218.6
June.....	103.2	105.7	95.8	122.4	119.6	.....	.....	.....	219.5
July.....	104.0	107.8	99.2	122.3	120.3	.....	.....	.....	213.7
Aug.....	103.4	105.8	96.4	121.4	120.5	123.7	125.7	144.2	212.7
Sept.....	102.7	103.5	94.0	119.5	119.9	.....	.....	.....	205.3
Oct.....	102.9	105.6	94.1	124.8	119.7	.....	.....	.....	194.5
Nov.....	103.1	106.1	94.5	125.5	119.9	.....	.....	.....	189.9
Dec.....	103.3	106.3	94.9	125.4	120.1	.....	.....	.....	193.0
1946									
Jan.....	104.0	106.5	95.4	125.0	119.9	124.6	125.9	140.4	195.4
Feb.....	104.6	107.0	95.9	125.6	119.9	.....	.....	.....	216.7
Mar.....	104.9	107.0	95.9	125.7	120.1	.....	.....	.....	.....

1. See Prices and Price Indexes 1913-1928, pp. 19-21, 270-289 and 1913-1939, p. 17.

2. Wholesale prices of Canadian products of farm origin only. See Prices and Price Indexes 1913-1937, p. 52, and Monthly Mimeographs 1943-44.

3. Wholesale prices of grain, fruits and vegetables.

4. Wholesale prices of animals and animal products.

5. See An Official Cost of Living Index for Canada, 1940.

6. Price Index Numbers of Commodities and Services used by Farmers (Revised Mimeograph).

7. Ibid 6. Includes prices of commodities in eight groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.

8. Ibid 6. Includes the eight commodities indicated above plus tax, interest and farm wage rates.

9. Monthly Review of Business Statistics, p. 8 and Monthly Indexes of the Physical Volume of Business in Canada, supplement to the Monthly Review of Business Statistics November, 1932. Yearly index numbers for 1943, subject to revision.

The present agreements covering the shipment of mutton, lamb and beef expire December 31, 1946. Further negotiations are to be undertaken to consider the extension of these agreements to cover supplies for 1947. Canada has been requested to increase the export of meat in carcass form which is suitable for the production of sausage. Offals and tongues will be required and will be the subject of further negotiations.

The present cheese contract, providing for the shipment of 125 million pounds per year, has been extended from March 31, 1947 to March 31, 1949. The present price is to be effective until March 31, 1948. Prices for the following year are to be established at a later date. An agreement is to be completed providing for the shipment of 600,000 cases annually of evaporated milk, at current basic prices for the two seasons ending March 31, 1947 and 1948. The United Kingdom agreed to purchase 3,000 tons of roller dried skim milk powder from the 1946 production.

The current contract for shell and dried eggs is to be extended from December 31, 1946 to December 31, 1947. During 1947, 1,750,000 cases of shell eggs and 5,000 tons of dried eggs are to be shipped, at the current basic prices for shell eggs. Owing to the difficulties in handling shell eggs in the United Kingdom during summer months Canada has been requested to cease shipments by May 1 each year and divert the summer surplus to the production of frozen melange and sugar dried eggs. By the autumn of 1946 the United Kingdom will provide Canada with an indication of her egg requirements for 1948.

Financial Agreements.—Canada agreed to provide the United Kingdom with a credit of 1.25 billion dollars repayable from 1951 over a period of 50 years and carrying interest at 2 per cent. In addition, the interest free loan granted to the United Kingdom in 1942 will be continued until 1951 and indebtedness in the amount of 425 million dollars resulting from the Commonwealth Air Training plan has been cancelled.

The additional credit the United Kingdom has received in Canada will enable her to overcome temporary financial difficulties in purchasing food and other supplies from Canada. A most favoured nation clause with respect to imports and exchange controls was included in the agreement.

Price Controls.—As a first step toward removal of price controls, price ceilings were suspended on February 1, 1946 from approximately 300 non-staple articles which are considered to be in sufficient supply so that unreasonable price increases will not result. It was emphasized that price controls on these goods were suspended and would be resumed if widespread and great increases should occur.

Price ceilings on certain non-essential imported commodities have been relaxed in an effort to encourage the two-way flow of foreign trade. This exchange of goods is necessary if permanent export markets are to be re-established in many countries to which Canada is now providing financial assistance.

At the same time it was announced that wage and salary controls were modified. These changes are not considered a threat to stability if they are used in a reasonable and responsible manner.

Business Activity.—A further decline of operations in a number of industries engaged mainly in war production and the shortage of materials contributed to lowering the level of production. This movement is reflected in the index of physical volume of production which dropped from 194.5 in January to 181.2 in February. In February, 1945, when Canadian industry was heavily engaged in war production, the index was 216.7.

The upward movement of the general wholesale price index continued. In February it was 104·6 which is the highest for that month since 1925. The February price index for farm products, both field and animal was the highest in 20 years. The index for field products was 95·9 which is an increase of 2·1 points over February, 1945. The animal products index rose from 122·7 in February, 1945 to 125·6 in the corresponding month of 1946.

The cost of living index remained relatively stable, easing off from 120·1 in December, 1945, to 119·9 in January, 1946. Decreases in the cost of eggs, oranges and lemons in February were offset by increases in costs of men's wear, furniture, furnishings and dishes.

LAND SETTLEMENT POSSIBILITIES IN EASTERN CANADA

G. P. BOUCHER

An intensified interest in land settlement has been manifest since the end of the war. Farmers living on sub-marginal lands, farmers' sons, returned soldiers interested in agriculture, and city workers facing the possibilities of losing continuous employment are all interested in the possibilities of land settlement.

These possibilities can be exaggerated and have led to a great deal of controversy in the past. This brief article does not purport to settle any argument. It only sets out a few problems such as the potential acreage of agricultural land open to settlement and the problems the individual settler faces in Eastern Canada.

New Brunswick.—The area of potential farm land in the Maritime Provinces is relatively small.¹ New Brunswick offers the greatest possibilities with an estimate of 1,336,000 acres, although much of this acreage cannot be expected to become very good farm land. The major portion is located in the five northern counties of Madawaska, Restigouche, Gloucester, Northumberland and Kent.

The main limiting factor of agricultural expansion in this province has always been the productivity of the soil. A large development of the dairy industry and live stock production for exports abroad or to other provinces is impossible in many sections due to the difficulties of securing good pasture and high yields of legume hay and silage crops.

Studies of crops in Eastern Canada² have shown that the average yield of oats, barley, clover hay and timothy hay were generally much lower on the Fredericton (and Nappan, Nova Scotia) Experimental Farms than on other Experimental Farms in Eastern Canada. On the other hand, the Fredericton Farm had the highest average yield of potatoes of all farms, next to the Charlottetown Experimental Farm. Soil and climatic conditions favour the growing of potatoes and New Brunswick has long been known as a large producer of good quality potatoes.

New Brunswick depends as much on forestry as on agriculture for its revenues. Approximately 80 per cent of its area is in forests and, during years of relative prosperity, the value of "gross" production of its forests surpasses that of its agriculture, while the reverse holds true in years of depression.

Although most agricultural enterprises, with the possible exception of potato production, were not very profitable, the severe unemployment situation of the thirties led the Provincial Government to undertake a vigorous policy of land settlement. To assist this government in planning its policies, a study of land settlement was conducted by the Economics Division of the Dominion

¹ Hurd, Burton W.—"Postwar agricultural settlement possibilities in Canada"—*Journal of Farm Economics* Vol. XXVII, No. 2, May 1945.

² Hopkins, E. S., Armstrong, J. M., and Mitchell, H. D.—"Cost of Producing Crops in Eastern Canada." Dominion Department of Agriculture, Bulletin No. 168, New Series, 1934.

Department of Agriculture in the summer of 1939.¹ This study was made in the counties of Madawaska, Restigouche, and Gloucester.

As part of this study, 43 records were obtained from farmers who had been established for a period varying from 20 to 100 years in areas adjacent to those newly taken up by settlement. The purpose was to obtain information which would facilitate the appraisal of agricultural possibilities in the light of past experience. It must be borne in mind, however, that 1939 was not a very successful year for the farmers of Northern New Brunswick.

Subsistence farming, supplemented by other employment, mostly lumbering, is typical of the region and had proved to be a sound system. With the economic depression setting in, many farmers, and their sons were quite willing to acquire new land close to their present farms. It is quite possible, however, that if more time had previously been devoted to land improvement, a greater income could have been obtained from the farms during the years of depression.

In 1939, the average size of the 43 farms studied was 89.3 acres of which 46.7 acres had been improved. The average investment in land, buildings, equipment, and livestock was \$1,769. The cash receipts for the year 1938-39 were \$226 and the cash expenses for the same year were \$178. Only 15 farmers reported a cash income of more than \$150 and 19 reported a minus income of \$250 or less. Nevertheless, they had not incurred very high indebtedness. Only 15 of them reported mortgage indebtedness. This ranged from \$100 to \$900. Other debts ranging from \$50 to \$300 were reported by only six farmers. This would suggest that most of them had been able to accumulate some savings before the depression.

The problem would appear to be one of proper balance farming and other employment. It is suggested that with better organization and management, both on a regional and on an individual basis, some success could be obtained. This success will also depend materially on the profitability of agriculture in general, in the areas open or to be opened to land settlement. This is a difficult problem to solve due to the difficulty of finding types of farming better adapted to soil and climatic conditions and new agricultural developments or possibilities.

Quebec.—Estimates of the area of potential agricultural land in the province of Quebec have been numerous and show wide variations. The difficulty of arriving at a reliable estimate is due mostly to the inadequacy of soil and aerial surveys in the northern part of the province. The largest estimates should certainly be scaled down since they allot too large an acreage to areas in which climatic conditions would probably militate against successful farming. A recent estimate divides the area of potential farm lands as follows:²

Lower St. Lawrence Valley.....	1,000,000 acres
Abitibi and Temiscamingue.....	1,000,000 "
Abitibi (unorganized parts).....	6,000,000 "
Territories being organized.....	1,500,000 "
Total	9,500,000 "

These figures seem reasonable but it is possible that reconnaissance soil surveys would prove them to be too high for the unorganized parts of Abitibi. Moreover, available meteorological data seem to suggest that a relatively large part of this area could not be put to agricultural use. A decrease of about 2,000,000 acres in these figures might be accepted as fair although lack of precise information does not warrant reaching too definite conclusions on the matter.

¹ Gosselin, A., and Boucher, G. P.—"Settlement Problems in New Brunswick." Dominion Department of Agriculture, Technical Bulletin No. 51, December 1944.

² Minville, Esdras—"La colonisation dans Québec." *L'Actualité Economique*, May 1942.

An estimate of 7,500,000 acres for the province should be both conservative and reliable and could be used to determine settlement policies. The colonization authorities, in the province of Quebec, favour the 100-acre farm. Consequently, it may be assumed that at least 75,000 new farms could be established.

An average of ten municipalities have been created each year during the last twenty years. Each Quebec municipality contains an average of 138 farms.¹ So, if all new communities have the same approximate number of farms, all possible agricultural land will be taken up by settlement within about 50 years.

However, this is only one probability. Other factors will affect the rapidity of land settlement and improvement. Some of these are industrial development, the development of new agricultural techniques and methods, the adoption of more modern methods of land improvement, the employment situation and the development of our economy as a whole.

The need for an energetic and long-range land settlement policy is well realized in Quebec. Numerous associations as well as university departments and private citizens give serious thought to the subject and impart their suggestions and knowledge to the provincial Department of Colonization. As an example, in 1945, the Minister of Colonization authorized the creation of a study committee whose purpose was to gather information and offer suggestions to the minister in connection with the proposed enactment of a law "to organize colonization according to progressive and rational methods." The committee's suggestions were incorporated in the Quebec laws on land settlement.

The following are six of the main recommendations:

- (a) The establishment, before the arrival of settlers, of a drainage system, and a community plan including roads, schools, and church.
- (b) The division of an area into farms and the determination of the types of farming.
- (c) The building of roads, before the arrival of settlers.
- (d) A rapid improvement of the land, by a labour syndicate made up of prospective settlers. A fair proportion of the lots should be improved, and buildings, tools, and enough productive materials should be supplied to enable the settlers to start farming soon after their arrival.
- (e) Sale of the land at cost price and easy payment facilities.
- (f) Technical advice and supervision of the settler's work, during the period of payment.

The adoption of these proposals should contribute to a rapid opening up of new territories, and afford the new settlers greater opportunities of making a success of their enterprises.

It might also entail a great saving of expenditures. There have been too many cases of lots which have had to be completely abandoned. Numerous others have had more than one occupant before they could be operated as a going concern. The reports of the Minister of Colonization reveal some interesting figures in this respect. From 1910 to 1940, 7,128,043 acres of land were sold or granted, and of that acreage 3,782,941 acres that is over fifty per cent, were abandoned or had to be reallocated to other settlers. In some cases, the lots were unfit for cultivation, and in others the settlers did not have the will, the ability, or the financial means to make a success of settlement.

This situation was not caused by lack of financial assistance. Prior to 1923, land settlement was promoted in various ways such as, the sale of lots at low prices and on easy terms, grants for road building, distribution of seeds, building of schools and chapels. Since 1923, direct assistance has been given to the

¹ Calculation based on preliminary figures. 1941 Dominion Census. Dominion Bureau of Statistics.

settlers themselves through various schemes. The basic idea of these schemes was to assist the settlers with means of subsistence, during the first few years after their acquisition of a lot.

The best-known of these schemes are: the land clearing and first ploughing premiums, the Gordon Land Settlement Scheme (Dominion-Provincial), the Vautrin Colonization Plan, the Provincial Plan and the Rogers-Auger Plan.¹

To obtain information on settlement problems, and to find out the degree of progress made by the settlers, the Economics Division conducted a survey of land settlement, in the counties of Abitibi and Temiscamingue, in the summer of 1937. Records were obtained from 142 new and 54 old settlers. Amongst the latter, 23 had settled prior to the introduction of land clearing premiums in 1923 and 31 had settled after that date. Many of the earlier settlers were farmers, who had disposed of their farms in older sections of the province. They had adequate resources when they acquired their new lots.

It is interesting to note that governmental assistance to the settlers established after 1928 was \$671 per farm from the date of establishment, whereas it was only \$137 per farm for those established before 1928. To ascertain the settlers' progress, an analysis was made of the sources of cash income and cash expenditures, the investment and indebtedness situation.

Cash income derived from the sales of farm products, wood, and labour off farm brought a yearly average of \$181 per farm in the new settlements and \$433 per farm in the old ones. Labour off farm contributed \$93 to this income on the new lots and farm products contributed \$348 on the old ones.

An average cash farm expenditure of \$123 for the year 1936-37, in the new settlements, and \$360 in the old settlements, was reported. Cash living expenditures were \$292 per farm per year, on the new farms, and \$343 on the old ones.

Investment in buildings and fences, farm equipment, livestock, and household equipment amounted to \$922 per farm, in the new settlements, for the year 1937. In the old settlements, it amounted to \$4,849.

Of the 142 settlers interviewed in the new settlements, 111 reported debts averaging \$178 per farm in 1937. In the old ones, 37 of the 54 farmers interviewed reported debts, averaging \$764 per farm. In the latter case, as much as \$588 per farm was owed on the land.

Some progress has been made. When the older established settlers arrived on their new farms, they had assets averaging \$2,442. Although they paid an average of \$1,435 for those farms, by 1937, they had been able to build up an investment in buildings, livestock, farm and household equipment, averaging \$4,849.

Ontario.—In the province of Ontario the largest areas of unimproved arable lands are in the clay belts of the Cochrane and Timiskaming regions. Some small blocks can also be found in the Rainy River, Thunder Bay, and Dryden districts. Altogether, Northern Ontario has a total of 4,450,000 acres of land suitable for agriculture. Since most farms in this area are of 160 acres it can be estimated that about 28,000 farmers could be established. According to the 1941 Dominion Census there were already 12,000 occupied farms in this region. Therefore, an additional 16,000 settlers could be established.

The history of land settlement in Ontario has not been one of continuous success. For the 25-year period 1912-37, a total of 24,996 lots or 64.7 per cent of those sold or granted, were abandoned or reallocated. On an acreage basis, this means about 3,000,000 acres or 72 per cent of the acreage granted. In some cases, the land was unfit for cultivation. In other cases, the settlers could not or would not perform their settlement duties.

¹ For a review of these and other plans, see: Gosselin, A., and Boucher, G. P.—"Settlement Problems in Northwestern Quebec and Northeastern Ontario." Dominion Department of Agriculture, Technical Bulletin No. 49, February, 1944; and Reports of the Minister of Colonization for the Province of Quebec, 1923 to 1945.

Ontario settlers have benefited by the Relief Land Settlement Scheme, better known as the Gordon Scheme.¹ This plan was initiated in 1932 and expired in March, 1936. During this period, 600 settlers were established. By March, 1938, 201 families had abandoned their lots and this movement continued after the outbreak of war in 1939.

The province of Ontario has always favoured loans instead of direct financial help to individual settlers. The Settlers' Loan Act of 1916 made provision for loans up to \$500. These could be obtained from the Northern Development Board. Long-term loans for the erection of buildings, the management and refinancing of the farm enterprise could be obtained by farmers having at least 35 acres of land under cultivation. These loans were granted by the Agricultural Development Board. On March 31, 1936, the Northern Development Board abandoned its loan granting policy and the Agricultural Development Board ceased making loans to settlers and farmers. Ontario farmers, however, can still obtain loans from the Dominion Farm Loan Board.

As an aid in appraising the economic possibilities of land settlement in Northern Ontario, a study was conducted by the Economics Division, in the summer of 1937. Information was obtained from 91 settlers. Of these, 54 were established in old settlements and the remaining 37 in new settlements. Most of those in the older settlements were farmers who had come from older sections of Ontario and Quebec. They had bought lots which had previously been occupied by one or more settlers. They brought substantial resources along with them but had to pay quite high prices for their lots. On the other hand, many of the new settlers arrived with very little financial resources and most of them had been on direct relief in urban centres.

The main sources of income were labour off farm, sales of wood, and farm products. Labour off farm and sales of wood brought in an average of \$43 per farm per year, in the new settlements, and \$128 per farm per year in the old settlements, for the three-year period 1935-37.

Sales of farm products accounted for an average income of \$51 in the new settlements, and \$560 in the old settlements, for the year 1936-37. In the latter, dairy products contributed a farm average of \$338 or 60.4 per cent of total income.

Cash farm expenditures averaged \$89 per farm per year on the new farms and \$280 on the old farms. Cash living expenditures averaged \$242 per farm per year on the new farms and \$330 on the old ones. A smaller revenue and a smaller number of people per family accounted for the smaller living expenditures on the new farms.

The inventory value of farm buildings and fences, farm equipment, live-stock, and household equipment averaged \$935 per farm in the new settlements and \$3,860 per farm in the old ones, for the year 1937. In both cases, buildings and equipment contributed the major portion of this value.

In the new settlements, 33 out of 37 settlers interviewed reported debts. These averaged \$199 per farm reporting. Of this amount \$164 were due on the land itself. In the old settlements, 42 of the 54 settlers visited reported debts. These averaged \$937 per farm reporting with \$782 being owed for the land.

The purchase price of the farms had averaged \$207 and \$2,171 per farm in the new and old settlements respectively. When this is compared with the 1937 indebtedness situation and the value of the settlers' investment in real estate, livestock and equipment, it can be inferred that some progress had been made.

Conclusion.—Although there are still relatively large areas open to land settlement in Eastern Canada, a more systematic approach to the whole problem must be adopted, if success is to be attained.

¹For a brief study of land settlement policies in Ontario see: Gosselin, A., and Boucher, G.P.,—"Settlement Problems in Northwestern Quebec and Northeastern Ontario." Dominion Department of Agriculture, Technical Bulletin No. 49, February, 1944.

Information on climatic and soil conditions, and on economic possibilities must be secured. The lack of information on climate and its variations does not permit the adoption of a sound long-term policy. The only remedy would be the opening of meteorological stations scattered throughout the whole accessible area not yet taken up by settlement.

Surveys should be completed or initiated with a view to determining which lands should remain in forests and which might be cultivated. These surveys should not be confined to a study of the structure, texture, and chemical components of the soil. They should also appraise the economic productivity of the land.

The settlers of to-day cannot be expected to start from scratch as did our pioneers of years ago. Some preliminary work must be done before their arrival. Community plans might be devised by land settlement authorities and should comprise:—

- (a) The allotment of sites for the erection of schools, and other community buildings.
- (b) The completion of drainage and road systems.
- (c) The division of the area into farms of a reasonable size with provision for a possible increase in size after a period of 15 or 20 years.
- (d) The clearing of part of the land and the erection of houses so that the settlers could start farming soon after their arrival. If possible, land clearing should be done by the prospective settlers themselves.

They should also be given an opportunity to contribute to the erection of the community buildings, such as schools and chapels, whether these be erected before or after their arrival.

The use of modern methods of land clearing should be considered. As an instance, the substitution of mechanical power for animal power should result in a larger acreage being released for the production of food and feeds in a much shorter time. The cost to the government and to the individual settlers might be considerably lower.

Lack of working capital may tend to force a settler out of farming. The majority of settlers interviewed by the Economics Division complained about the lack of capital when governmental assistance by way of grants or premiums was no longer obtainable. This was the most critical period. The farms still did not produce enough revenue to enable the settlers to carry on efficiently. Provision of a larger working capital would have enabled them to make the necessary improvements and buy more livestock and equipment.

The problem of land settlement is a many-sided one. It is interwoven with the problems of land, population, agriculture, transportation, and economic development. It calls for a considerable amount of research work. Research should help in placing the problem in its proper perspective and should serve as a guide for future policies.

LAND SETTLEMENT IN WESTERN CANADA

C. C. SPENCE

Studies in Land Settlement

While the new settler of the woodland regions in Saskatchewan, Alberta, and the interior of British Columbia does not have the same choice of virgin farm sites as had his predecessors, there is a compensating factor in that he can profit by the experience of his predecessors in adapting himself to the environment and economy of the region. This experience has been systematically

studied and the results have been made known in a series of reports.¹ In this article an attempt will be made to summarize a few of the more significant points pertinent to settlement problems in the woodland areas of to-day.

This study of settlement in the woodland areas covers the experience of nearly 2,200 settlers located in the northeast, north central, and northwest parts of the presently settled areas of Saskatchewan; in the northeast, west, and the Peace River block of Alberta, and in the interior of British Columbia on the Prince George-Prince Rupert Railway line. While there are characteristics peculiar to local areas, in general there is a similarity in the climate, physical and economic conditions among the several areas, giving rise to like problems in the utilization of the resources and settlement.

Problems of the Settler

Transportation Facilities.—In settlement for agricultural purposes land is of first importance. With very few exceptions good land in the north does not occur in large compact blocks as on the prairies, but rather in small scattered areas interspersed with a high percentage of poor land. This creates problems in serving each and every partially isolated area with adequate transportation facilities and consequently the costs must be relatively high for bringing goods into the area and on taking its products outside to be marketed. The incidence of these relatively high transportation costs fall directly on the producer in the isolated area who must depend upon an outside market. This gives rise to the number one series of problems in all the more recently settled woodland areas in Western Canada, although the effect on each varies according to the stage development.

Of the more recently settled woodland areas in Saskatchewan, Alberta, and British Columbia, about one-half are reached by a railway which puts the outer rim of settlement within fifteen miles of it. The other new settled areas are farther removed from railways. Some newly settled areas in northwestern Saskatchewan and in the Peace River country are as much as 50 miles from a railway; neither are they served by all-weather roads. While railways and all-weather roads considerably reduce the costs of getting goods into the area and products to be marketed out, they do not necessarily mean low-cost transportation. In some instances, for example the Peace River block, there is a long haul across undeveloped stretches of country; in other instances, for example north central Saskatchewan, the distance may not be so far, but the territory served is a narrow farming belt yielding only light traffic; while in other areas such as in the interior of British Columbia, there is not only a long haul over wide stretches of uninhabited, undeveloped country, but the areas within to be served are generally narrow belts of farm settlement broken

¹ Anderson, W. J.—“A Study of Land Settlement in the Prince George-Smithers Area, British Columbia, 1944 and 1945.” Dominion Department of Agriculture (in co-operation with University of British Columbia). Unpublished.

Acton, B. K.—“A Study in Farming on Bushlands at Athabasca, 1945.” Dominion Department of Agriculture, Economics Division (in co-operation with University of Alberta). Unpublished.

Acton, B. K.—“Farming on Bushlands at Debolt-Peace River, Alberta, 1945.” Dominion Department of Agriculture, Economics Division (in co-operation with University of Alberta). Unpublished.

Acton, B. K., and Spence, C. C.—“A Study of Pioneer Farming on the Fringe Areas of Alberta-Sengudo-Winfield Area.” Dominion Department of Agriculture, Economics Division (in co-operation with University of Alberta). Unpublished.

Acton, B. K.—“A Study of Pioneer Farming in the Fringe Areas of the Peace River, Alberta, 1942.” Dominion Department of Agriculture, Economics Division (in co-operation with University of Alberta). Unpublished.

Hope, E. C., and Stutt, R. A.—“An Economic Study of Land Settlement in the Albertville-Garrick Area of Northern Saskatchewan, 1941.” Dominion Department of Agriculture. Processed Report issued January, 1944.

Kristjanson, B. H., and Spence, C. C.—“Land Settlement in North Eastern Alberta, 1943.” Dominion Department of Agriculture, Economics Division (in co-operation with University of Alberta). Unpublished.

Stutt, R. A., and VanVliet, H.—“An Economic Study of Land Settlement in Representative Pioneer Areas of Northern Saskatchewan.” Dominion Department of Agriculture, Publication 767, June, 1945.

frequently by stretches of non-farming land. Of course, the costs of transportation are shared with the traffic created by other industries in the new-settled regions, particularly lumbering.

Competition of Other Areas.—The number two series of problems are those associated with the range of crops which can be grown and livestock products which can be produced economically within the areas in competition with those areas on the prairies and in the park belt producing the same kind of livestock and raising identical crops. Cattle can be raised more cheaply on the prairies where they can be grazed on the native grasses than in the sparsely grassed woodland areas. For grains the grey-wooded soils are less productive than are the black soils of the park belt. This gives an advantage to the parkland farmer whether raising grain for direct sale or through livestock. There appears to be a relative advantage in the production of legumes in the woodland areas. This has been a highly lucrative business in some areas. Many of the problems the new settler faces are common to all who have to adapt themselves to a new environment, to learn by trial and error what crops to grow and what animals to produce and how these should be husbanded. An experimental stage must be gone through, a stage which may prove both costly and discouraging to the pioneer who is likely to have been brought up in a different type of farming country.

Isolation.—The third set of problems are those connected with the social life and well-being of the pioneer and his family. Appraised by our modern standards the life of the pioneer farm family in our woodland settlements is a hard one. Due to isolation and distance to outside centres, they are often deprived of medical services, educational facilities, and contact with other desirable social institutions.

Lack of Capital.—The fourth set and possibly those which overshadow all other problems is associated with the characteristic lack of capital in a newly-settled woodland area. Capital is needed to develop the farms and the community and to cut short that long drawn out period of establishment which keeps the new settlers at near poverty level.

Classes of Pioneer Farms

In general these more recent woodland settlements have many common characteristics. Three different classes of farms are discernible in each area. First, there are the non-commercial farms. Such farms may be operated by part-time farmers who make part of their living from the farm and part from working for wages. The latter usually brings in more cash than does the farm business. Possibly throughout the years lumbering has been the greatest single source of employment. Others in this same class draw pensions or funds from other sources, and supplement the regular stipend by living on a farm and deriving part of their living from it. Usually on these non-commercial farms, there is only a small acreage under cultivation. The second class consists of those which might be described as small commercial farms, where the operator devotes almost full time to the farm business and earns only a small part of the gross income from sources off the farm. These farms are still in a pioneer stage of development. The third class comprises the commercial farms which have developed and grown beyond the pioneer stage.

About one-sixth of the farms covered in the study are part-time farms, two-thirds small commercial, and one-sixth large commercial. It is within the second group—the small commercial—that one might look for the basis of determining a minimum size unit, minimum capital, crop and livestock enterprise programs under varying circumstances necessary to give an adequate income in order to support the settler and provide for some expansion toward the third stage.

Minimum Size for Economic Units

From the small commercial class of farms of the various studies, groups of farms were selected where the average surpluses above operating costs, capital maintenance, and farm family cash living costs, were adequate to pay off in a reasonable time the capital cost in the establishment of the farm unit. It was found that these varied in size from an average of 80 cultivated acres for the Debolt-Athabasca area farms studied in 1945 to 101 cultivated acres for the north Saskatchewan farms studied in 1942. The sizes of the individual farms making up these groups varied much more widely—from 50 acres of cultivated land up to 199. Farms were of mixed crop—live stock types, with emphasis generally placed on live stock on farms with less cultivated acres and on crops on farms with more acres under cultivation.

Group averages for acres under cultivation, for total acres in the farm, and for the main items contained in the business statements, for the particular years of the studies, are given in Table 1.

The net farm incomes averaged from approximately \$450 for the year 1940-41 to \$700 for the year 1942-43. There was a surplus averaging from about \$150 up to a little less than \$300 available for paying debts or for savings, after the extra money earned from sources off the farm was added to the net farm income, and the cash living cost of farm family deducted.

These surpluses may be estimated at \$300 to \$500 (Table 2) assuming an equivalent level of living, and the same income from sources off the farm, on a 1945 cost-price basis. Actually, the surpluses would have been somewhat less than these as the prospect of a higher income would have encouraged a greater outlay on living than what was accepted three years ago.

A study of the small commercial farms averaging 80 acres of cropland in 1945 in the Athabasca and Debolt areas of Alberta had for the business year 1944-45, an average surplus above living costs of about \$280. The income earned from sources off the farm which was included in this surplus averaged about \$200.

If these incomes were computed using prices based on the ten-year average 1935-44 to estimate receipts, and the same period for costs, the results would be different than actually occurred in the Debolt-Athabasca area farms for 1945. Without the outside income there would have been a deficit and not a surplus in the operation of these farms. In the other areas for which the farm operations and income statements of 1940-43 have been described, with the same ten-year (1934-45) average cost price structure, the estimated surpluses would have ranged about the same as the actual figures revealed by the farm statements for years 1940 and 1943.

By and large in these newer settled areas a minimum of 100 cultivated acres is required to give a reasonable assurance of the operator being able to earn a surplus to service some indebtedness for the development of the farm or to make savings. The suggestion of the size 100 acres also implies a farm organization with a program of crops and livestock enterprises of the kinds, acreages, and numbers usually found on similar sized units in the woodland areas of Western Canada.

Capital Required For Economic Unit.—The experiences of the new settlers make it possible to determine the capital required to establish a unit of 100 cultivated acres in woodland areas equipped to give the income indicated.

Real Estate. First there is the cost of land improvement. The cost of bringing the land under cultivation varied according to the density of the cover. Custom clearing generally fell within the range of \$8 to \$13. Almost all the accessible potentially arable land in the woodland regions to-day requires fairly heavy clearing and if based on to-day's prices would cost from \$12 to \$20 per acre to clear and prepare the land for cultivation.¹ In general a reasonable estimate

¹ Acton, B. K.—“The Use of Power Equipment in the Improvement of Alberta Bushlands.” Dominion Department of Agriculture, Publication 766, Dec., 1944.

would be \$16 per acre. Assuming that the unimproved land was a free grant from the Crown the cost of a 100 acre cropping unit would amount to $100 \times 16 = \$1,600$.

Farm buildings, are needed as well as a water supply and fences. The house is usually the largest investment among these items. The average value placed on the houses on over one thousand pioneer woodland farms in Saskatchewan surveys of the pioneer farm homes in 1941-43 was \$330. This may be taken as representative of values in every new settled area of the west. About 12 years had elapsed since these homes were built and at the time of the survey only four per cent were rated as being in good condition. The original investment which in many instances was made at different times and over several years might be estimated at \$550. The investment in barns averaged about one-half this amount and along with granary, fences and a water supply, it could be estimated that over \$1,000 on an average had been invested in these small commercial farms to give only the essential building improvements. Generally, too, this does not cover the labour directly contributed by the operator and his family in construction. It is difficult to transpose these building figures into present day costs, but indications are that with a similar contribution in labour by new settlers as was made by the established settlers, \$1,500 might cover this part of the capital outlay. This gives a total investment of $\$1,600 + \$1,500$, or \$3,100 in real estate improvements for the small commercial farm in the woodland regions.

Other Capital Items. But real estate is only one item of capital on a productive farm unit in the woodland area. There are also livestock, machinery and equipment, as well as feeds and supplies. The average investment in livestock on 230 of these small commercial farms in the Peace River and in northeastern Alberta in 1942 and 1943 amounted to nearly \$1,000. With present prices the equivalent would be about \$1,100. On the same farm the average value of machinery and equipment amounted to nearly \$800. This might be considered as about one-half the value of the machinery at new machinery prices; viz., \$1,600. The value of feeds and supplies carried on the same farms (mid-summer 1942 and 1943) averaged \$120. At 1945 prices this would have been valued at \$165. Thus a similar capital investment in livestock, machinery, and other equipment, and in feeds and supplies for a productive unit in the woodland areas such as described in 1945 would total $\$1,100 + \$1,600 + \$165 = \$2,865$. Along with a real estate investment of \$3,100, the total investment in farm capital would amount to \$5,965, or approximately \$6,000. This is in addition to the original land grant of unimproved land.

Probable Net Farm Revenues.—The surpluses earned above operating, capital maintenance and family cash living costs on these small commercial farms in the several areas, averaged \$150 to \$300 in the years from 1940 to 1943. Estimated on a 1945 cost-price basis and allowing for the same revenue from sources outside the farm businesses, these surpluses would average \$300 to \$500. Assuming it was \$400 per annum, such a surplus would pay off a capital investment of \$6,000 in 25 years with interest at $4\frac{1}{2}$ per cent per annum.

The surpluses for payment of debts or for savings actually earned by the small commercial farms from 1940 to 1943 averaged from \$150 to \$300 for the several areas surveyed. A \$225 per annum surplus would pay off a capital investment of \$3,300 in 25 years with interest at $4\frac{1}{2}$ per cent per annum.

Pioneer's Capital in the Beginning.—New areas are usually settled by those who have very little capital assets—that is one of the reasons for moving into undeveloped areas. Moreover, private agencies are not interested in making loans in untried areas and public agencies usually follow a policy of waiting until the area is developed as security before making loans. The need for financial assistance is in the beginning. Of the 2,200 settlers who pioneered in

these woodland areas very few had \$6,000 to invest in their homestead; very few had even the \$3,300¹. The average value of the assets of these settlers at the time of settlement ranged from \$600 to \$1,000, the average value of assets of one-third of the settlers being less than \$500. Many did not have access to additional capital. The settlers of the small commercial farms referred to herein had been, at the time of the survey, on their present farms for about 12 years on an average.

Progress in Land Improvement and Effects.—The first land to be broken was that which required little clearing. There were open patches of grass-land surrounded by sparse growth of trees intermixed with fallen and rotting timber, the result of fires which had passed across the country a few years earlier. Settlers reported having been able to get from 9 to 18 acres of this broken per year. Slower progress was encountered in clearing and breaking the heavier treed land, an average of only six acres per year being reported for that with medium dense cover and only four acres per year with the dense tree growth cover. At the latter rate 25 years would elapse before adequate acreage could be broken to provide for the minimum size cultivated unit suggested.

More and more of the dense cover will be encountered as settlement is expanded. If, too, from this slowly accumulating improved acreage enough must be earned to provide food and clothes for a growing family, for shelter, to buy tools and implements, and to accumulate livestock and all the other items of a productive farm plant, then the process is often a trying and laborious one and deprives deserving settlers and their families, of the comforts and necessities of life for a long period. This was exactly the lot of many of the pioneers who settled on bushland and whose experiences are the basis of the observations made herein.

Levels of Living.²—In 1943 the average cash living expenditure per family for 200 of these representative pioneer farm families in northern Saskatchewan was \$516. For 202 representative farm families in the older and established farming regions of Red Deer and Wetaskiwin in west central Alberta it averaged \$1,031 per family, or exactly twice as much. Cash living costs include all items of the family budget, such as food, clothing, health, education, personal expenses, life insurance, etc. Food comprised 41 per cent of total cash purchases for living for the pioneer farm families and only 35 per cent for the central Alberta farm families. Only two per cent of the pioneer farm homes had central heating facilities, 14 per cent a power washer, and 12 per cent a kitchen sink, compared with 30, 61, and 39 per cent, respectively, for the central Alberta farm homes. This was in 1943 after these pioneer farm families had spent 12 years in work and saving to build up a minimum sized unit. All of which suggests that capital be made available if the physical, climatic, and economic conditions warrant it, to establish quickly the minimum sized plant.

Bases for Appraising Potential Settlement Areas

The question which naturally follows is where and how extensive are the areas in Western Canada where the climate, physical and economic conditions warrant encouraging additional settlement. The studies referred to cover specific areas in northern Saskatchewan, in northeastern and western Alberta, as well as the Peace River area of Alberta and the interior of British Columbia along the Prince George—Prince Rupert railway line. Even though broad reconnaissance

¹ More than four-fifths of the present holdings were acquired by homestead or through a nominal purchasing plan which really meant a land grant from the Crown.

² Turnbull, Helen M.,—"A Level of Living Study of Families in the Pioneer Areas of Northern Saskatchewan." Dominion Department of Agriculture, Economics Division (in co-operation with University of Saskatchewan) 1943. Unpublished.

Edwards, F. M., Elliott, H. E., and Turnbull, Helen M.,—"Levels of Living of Farm Families in Representative Rural Areas of Western Canada." Dominion Department of Agriculture, Economics Division (in co-operation with Universities of Saskatchewan and Alberta) 1944. Unpublished.

soil surveys have not been completed in most of these areas, attempts have been made to estimate the extent of probable settlement possibilities in these and near adjacent areas. Considering areas being farmed at present, land may be assumed to be suitable for agricultural settlement if it compares favourably with respect to physical characteristics and climatic conditions, if it can be improved at no greater cost, and if commodities can be produced and marketed at the same expense. This sets the conditions for the operation of a farm that will support the operator and his family, and at the same time provide for the maintenance of the unit and permit some surplus being earned for improvements. To earn a pioneer's level of living and a small surplus a farmer would need approximately 100 acres of cultivatable land with adequate stock, equipment and buildings to enable him to utilize the land properly. On the basis of the surveys the surplus earned in pioneer areas would pay off the capital cost of the improvements, stock and equipment in a period of possibly 25 years.

If an area is to be successfully settled, then along with farm development there will have to take place community development in the form of improved roads, better schools with higher educational facilities, health services and other social organizations, as well as establishment of additional economic services for operation of farm businesses. While this will probably mean lower costs for some services such as bringing goods into the community and taking goods to market, the development of economic and social services, means a rise in the level of living and will result in higher expenses. This will require greater farm incomes than did the simpler life of the earlier pioneer days.

For the types of farming in general which can be anticipated for these areas, a higher earned income will require the increasing of the cultivated acreage per farm. More land will be broken out not only on the commercial farms, but also on the farms of the part-time farmers, many of which will be absorbed in the commercial farms.

In the more recently settled areas about 50 per cent of the existing farms are a quarter section size, 30 per cent half section, and 20 per cent larger than one-half section. Where the soil is black and grey-black, and a goodly part of the parcel cultivatable, a quarter-section may be a large-enough unit to continue to support a farmer and his family in a growing and developing agricultural community. It is not likely to be adequate if the parcel is on predominantly grey-wooded soil and any considerable part is unsuitable for cultivation. In these representative areas of the more recently settled woodland regions, roughly one-third of the land is of black and grey-black transition soils, and two-thirds are grey. Of the occupied land, in some areas farms average as high as 85 per cent potentially cultivatable land, other areas only 75 per cent, while still others less than 66 per cent. By and large, on most of the potential land for settlement, an economic farm unit would need to be no less than one-half section per settler.

Potential Settlement Areas

*Saskatchewan.*¹ It has been estimated that in northern Saskatchewan there remains less than three million acres of unoccupied land arable for agriculture and much of this land occurs in scattered patches too small to encourage the growth of agricultural communities. The largest contiguous area comprising possibly one-half million acres of land lies along the Saskatchewan and Carrot Rivers in the northeastern part of the province, and a goodly part of it is covered with a heavy stand of merchantable timber.

¹ Mitchell, J., and Moss, H. C.,—"Problems of Land Settlement in Saskatchewan." Scientific Agriculture, December, 1942.

Mitchell, J., Head, Soils Department, University of Saskatchewan, "Possibilities of Agriculture and Development of Other Resources in Northern Pioneer Areas in Saskatchewan." Ninth Annual Meeting of Sask. Agric. Col. Grad. Assn., Fifth Series of Lectures, University of Saskatchewan, 1944.

TABLE 1.—GROSS RECEIPTS, EXPENSES, LIVING COSTS AND SURPLUS SMALL COMMERCIAL FARMS
SETTLEMENT STUDIES 1941-45

	Albert- ville Garrick	Sangudo- Winfield	Northern Sask.	Peace River	North- eastern Alberta	Athabasca Debolt
	\$	\$	\$	\$	\$	\$
Gross receipts, with inventory increases.....	1,388	1,150	1,316	1,108	1,811	1,640
Expenses, with inventory decreases.....	903	701	796	551	1,100	953
Net farm income.....	485	449	520	557	711	687
Family cash living.....	410	370	406	372	588	615
Net income or surplus.....	75	79	114	185	123	72
Non-farm income.....	72	77	172	70	93	207
Surplus with non-farm income..	147	156	286	255	216	279
Cultivated acres.....	91	91	101	100	95	80
Total acres.....	214	306	272	301	291	280
Year of business statement.....	1940-41	1940-41	1941-42	1941-42	1942-43	1944-45
Number of farms in above statements.....	212	66	389	158	72	33
Total number in study.....	304	240	687	416	175	95

TABLE 2.—ESTIMATED GROSS RECEIPTS, EXPENSES, LIVING COSTS AND SURPLUS
SMALL COMMERCIAL FARMS
SETTLEMENT STUDIES 1941-45 BASED ON 1945 PRICES

	Albert- ville Garrick	Sangudo- Winfield	Northern Sask.	Peace River	North- eastern Alberta	Athabasca Debolt
	\$	\$	\$	\$	\$	\$
Receipts, with inventory increases.....	2,026	1,679	1,645	1,385	1,956	1,640
Expenses, with inventory decreases.....	1,138	883	915	634	1,155	953
Net farm income.....	888	796	730	751	801	687
Family cash living.....	455	411	430	394	594	615
Net income or surplus.....	433	385	300	357	207	72
Non-farm income.....	72	77	173	70	84	207
Surplus, with non-farm income..	505	462	473	427	291	279

From 1931 to 1941 in northern Saskatchewan the number of farms increased by 6,800¹ due for the most part to the growth of new settlements. If all the arable land now unoccupied were to be settled, possibly another 6,800 farmers could be accommodated. But, as noted, 50 per cent of the farms, already there, are only a one-quarter section in size, and if there is to be an opportunity given for the now-settled people to increase their income and raise their level of living, some increase in acreage of many of these quarter section farms must be allowed for. Then it must be noted again, that much of this probable arable acreage lies in inaccessible scattered patches too small to support agricultural communities; so that possibly all the land suitable for agricultural development in the near future will not accommodate more than 3,000 new settlers. This estimate is a rough one, for as yet no systematic soil survey has been made in these northern potential settlement areas.

¹ Census of Canada.

Alberta.¹—Rough estimates are available of the potential settlement areas in the woodland regions of Alberta, as only broad reconnaissance soil surveys have been made. In a few areas surveys have been made in some detail. There appears to be, however, very little unoccupied arable agricultural land in the northeastern and the western part of the province, other than that required to permit the expansion of existing farms into more satisfactory economic units. The Peace River area appears to be more promising. Within the Peace River area of Alberta, not including the Fort Vermilion, Hay Lakes, Nelson, and other more northerly regions, it is estimated there are about three million acres of potentially arable land. This will include much of what is described as second-class grey-wooded soil in addition to the first-class grey-wooded and the darker parkland soil. Much of this lies in fairly large blocks west of Hines Creek and Spirit River to the British Columbia boundary. Again allowing for land not readily accessible and scattered in patches too small to warrant encouraging the growth of agricultural communities, it has been estimated that accommodation might be made for nearly 7,500 settlers in the Peace River country. This would mean doubling the number of presently occupied farms.

British Columbia.—The Prince George—Smithers area in British Columbia has been covered by a soil survey. About half the area has been mapped in considerable detail. It has been estimated that there are about 600,000 acres of unoccupied land comprising soils adaptable for agricultural production.² If the pattern of this arable land were so interspersed among other types that in this utilization 100 and more acres could be successfully cultivated per farm, then one might estimate agricultural accommodation in this area for more than 3,000 new settlers. But here again is the problem of providing for the farm expansion of those already settled and of the occurrence of small patches of desirable land too far removed from the main settled area to justify the encouragement of agricultural communities.³ Possibly the accommodation for 2,000 new farm settlers would be all that could be reasonably hoped for under the present economic conditions. Even this would mean at least 160 per cent increase in present number of farms (including all types) in this general area.

There are areas outside of those which have been dealt with specifically in the foregoing where it is believed possibilities for land settlement exist. It is believed the Peace River block in British Columbia offers such possibilities.

¹(1) Wytat, F. A., and Younge, O. R.—“Preliminary Soil Survey Adjacent to Peace River, Alberta, West of Dunvegan.” Report No. 23, Research Council of Alberta, University of Alberta.

(2) Wyatt, F. A.—“Preliminary Soil Survey of the Peace River-High Prairie-Sturgeon Lake Area.” Report No. 31, Research Council of Alberta, University of Alberta.

(3) Archibald, E. S.—“The Canadian North West.” C.S.T.A. Review, December, 1943.

(4) Acton, B. K., Bowser, W. E., Carlyle, R. C., Paul, A., and Anderson, J. L.—“Alberta's Land Resources and Their Future Settlement.” Paper prepared for C.S.T.A. Meeting, Edmonton, January, 1943.

²(1) Kelly, C. C. and Farstad, L.—“Soil Survey of Prince George District, British Columbia.” Unpublished.

(2) Farstad, L., and Laird, D. G.—“Soil Survey of Vanderhoof-Smithers Area, British Columbia.” Unpublished.

³Anderson, W. J.—“Study of Land Settlement in Prince George—Smithers Area, British Columbia.” Dominion Department of Agriculture, Economics Division, (in co-operation with University of British Columbia).

There were 153 farms out of the 263 included in the Pioneer Farm Business Surveys of 1944 and 1945, of the crop, live stock and mixed crop—live stock types. Seventy-four of the remaining types were part-time and subsistence, and the others consisted of specialized poultry, whole milk, and vegetable and forage seed farms. The 153 farms of the crop, live stock and mixed crop—live stock types were in general like the farms reported in the foregoing for Saskatchewan and Alberta. The surplus, including \$183 obtained from sources off the farm above current operating, capital maintenance and farm family cash living costs averaged only \$70. These farms contained an average of 87 acres cultivated and carried an average of 18 productive animal units. While in part of the area crops were below normal, prices of farm products during this period were above the long-time average. It is apparent that the 86 cultivated acres for the usual type of commercial farms is too small a unit for making headway in paying debts or for savings in this area.

Although an estimate of 12,500 additional farm units was given above for the areas to which specific reference was made, yet one would hesitate to hazard an opinion as to the probable number of farm units which could be established in the less known areas.

THE PIONEER FARM BUSINESS UNDER A WARTIME ECONOMY¹

B. K. ACTON

Many farmers who are developing farms in the wooded regions of the province of Alberta, probably feel that they have accomplished little during the past five or six years—that is, beyond the fact that they are somewhat older and more experienced. The cultivated acreage is still small and surrounded by plenty of bush; the buildings are not the most modern; a car of recent vintage is an unattainable luxury; and the amount of cash in the bank is insufficient to withstand any period of adversity.

Through surveys conducted by the Economics Division, Dominion Department of Agriculture, since 1941, in the wooded regions of Alberta, we have been able to measure the rate of progress, and to note changes in acreage cultivated, farm organization, earnings and level of living. During the past five or six years many changes have occurred in the pioneer districts and these changes can be attributed to wartime demands and consequent higher prices for farm products.

At the start of the war many farmers were existing on homesteads having from 10 to 50 acres under cultivation, and with a one- or two-roomed log shack providing the comforts of home. In many cases one horse along with one provided by a neighbour furnished the power to clear and cultivate the land. Farm machinery was scarce, and sowing the seed broadcast was not uncommon. Although settlers were told the type of farming for which the grey wooded soils were suited, the world at large did not make any specific demand for any one particular farm product. The main problem and worry was to get cash, and the urgency for cash prohibited the adoption of better agricultural practices. The living expenses included only the bare necessities as far as groceries were concerned, and a pair of overalls per year for Sunday wear. For amusement, the settler took part in the local baseball game, and thus built up a healthy appetite which caused greater consumption of store foods, which took money to buy.

What is the picture to-day as compared with that of the late "thirties"? The Economics Division conducted a farm management survey west of Edmonton in the Sangudo-Winfield Area four years ago for the farm business year of 1940. A similar study was made north of Athabasca for the farm business year of 1944. The two areas are more or less comparable, both being grey wooded soil districts and settled about the same time. In order to ascertain the effect of wartime demands and prices on the farm business, farms having similar acreages cultivated, and the same number of livestock, have been compared. Farms selected in 1940 had 72 acres of cropland and those selected in 1944, 82 acres of cropland. In each year 50 per cent of the cropland was devoted to wheat and oats production in equal proportions. In 1944, however, most farms had a few acres in legumes for seed production. This was not so in 1940. The average number of cattle per farm in each district was ten head and nineteen hogs. In each area four head of cattle and twelve hogs were sold per year per farm.

Total amount invested in farm capital was: 1940—\$4,800, and 1944—\$5,100. The value of farm equipment showed an increase of \$500 during this period, as a result of settlers having money to acquire much needed machinery.

¹ Excerpts from a radio talk given on January 18, 1946.

Total cash farm receipts climbed between 1940 and 1944. Factors definitely affecting increased farm receipts were—

- (1) A change in the price of wheat from approximately 70 cents per bushel to \$1.25 per bushel at Fort William,
- (2) An increase of from \$8 to \$16 per 100 lbs. in the price of hogs, and
- (3) Availability of outside employment at increasing wage rates which doubled the farmers' income from non-farm sources. During this period prices rose for cattle, cream, eggs and poultry, which all helped in "boosting" the farm receipts.

In 1940, the average cash receipts per farm were \$900 and in 1944 they were \$1,500. This \$600 per year increase in receipts more than compensated for any increases in cash farm operating and capital expenses. These expenses only went up \$350 per year. A better level of living was being enjoyed. Cash living expenses changed from \$350 in 1940 to \$615 in 1944 per family per year, or from \$8 to \$13 per person per month.

After the current cash expenses had been met, what did the settler have for payment of debts or for savings? He had in 1940 only \$120, and in 1944, \$290. In other words, his farm surplus was greater by $2\frac{1}{2}$ times, while at the same time he enjoyed a much higher level of living.

The factors mainly responsible for this improved position are: first, the demands for food for the armies and our allies forced prices to rise for agricultural commodities in order to encourage farmers to produce adequate supplies. Second, where the current price was not sufficient to bolster production, a further addition was made to the price in the form of a subsidy. At the same time the Government placed ceiling prices on essential consumer goods in order to stabilize the cost of production and the cost of living. By 1944 the index price of goods the farmers had to sell was relatively higher than the index price he had to pay for services and commodities compared with pre-war years.

Because of this, many of the farmers in the wooded regions of Alberta have had larger incomes and have been able to develop their farms from a part time subsistence business into a full time and more efficient enterprise. Many are now getting out of the "bush" and away from the old problems associated with pioneer days.

SUBSIDY PAYMENTS MADE BY THE DOMINION DEPARTMENT OF AGRICULTURE

During the calendar year 1945 the Dominion Department of Agriculture paid out a net amount of 89.3 million dollars in subsidies and bonuses. These subsidies comprised direct cash payments to farmers in the case of wheat acreage reduction, milk, butterfat and cheese, while indirect subsidies provided feed and fertilizer assistance. All payments were the direct result of wartime economic conditions.

Subsidies and Farm Cash Income.—Estimates of "cash income from the sale of farm products" prepared by the Agricultural Branch of the Dominion Bureau of Statistics included bonuses or subsidies paid by the Dominion or Provincial Governments to farmers for the production of the commodities subsidized. In the Prairie Provinces where equalization payments have been included in the prices farmers have been receiving for oats and barley since April, 1943, these payments were included in the prices used to calculate the total value of sales. A guaranteed minimum price of wheat was used in estimating the cash income. The amount paid during the year on account of wheat participation certificates was entered separately.

However, payments made under the Wheat Acreage Reduction Act, the Prairie Farm Assistance Act, and the Prairie Farm Income Act, were not included in the estimates of cash income from the sale of farm products. The following payments are included in the cash income estimates:

SUBSIDIES PAID OUT BY THE DOMINION DEPARTMENT OF AGRICULTURE² 1945 CALENDAR YEAR

No.	—	Canada	P.E.I.	N.S.	N.B.	Quebec	Ontario	Manitoba	Sask.	Alberta	B.C.
		\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
1	Fluid Milk.....	12,671,811	55,453	587,170	360,093	3,433,953	5,579,766	570,330	321,521	601,155	1,162,370
2	Butterfat.....	23,688,687	351,888	590,352	628,593	6,931,973	6,363,807	2,251,018	3,179,191	2,869,624	522,421
3	Concentrated Milk.....	1,882,101	.....	16,831	.....	409,803	1,254,161	16,058	4,305	50,712	130,231
4	Milk—Cheddar Cheese.....	4,269,692	19,906	.....	29,107	1,407,267	2,615,697	91,457	12,616	82,028	11,614
5	Cheese—Bonus on Quality.....	1,663,458	1,125	.....	9,566	400,560	1,224,647	5,910	954	12,959	7,736
6	Cheese—Factory Improvement.....	5,791	.....	.....	.....	1,337	4,454	.....	.....	.....	.....
7	Hog Premiums.....	10,737,127	126,193	25,726	63,348	1,024,170	3,759,122	737,889	1,568,601	3,346,689	65,389
8	Fertilizer Subventions.....	417,012	52,426	22,624	91,339	123,055	95,954	.....	.....	.....	31,615
9	Lime Subsidy.....	229,725	5,664	35,693	47,700	133,108	5,582	.....	.....	.....	1,978
10	Feed Freight Assistance.....	16,423,552 ²	358,520	1,219,034	1,089,143	6,061,026	6,052,639	.....	.....	.....	1,643,193
11	Alfalfa Meal.....	6,314 ¹	.....	.....	.....	.....	.....	.....	.....	.....	.....
12	Feed Wheat Drawback.....	6,625,077 ²	114,669	257,736	223,209	2,064,608	3,074,966	.....	.....	.....	889,889
13	Feed Assistance—Plan A.....	941,039 ¹	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Plan B.....	1,171 ¹	.....	.....	.....	.....	.....	.....	.....	.....	.....
14	Wheat Acreage Reduction.....	822,377	.....	.....	.....	.....	.....	133,491	262,145	426,741	.....
15	Prairie Farm Assistance.....	5,616,714	.....	.....	.....	.....	.....	163,421	2,638,186	2,815,107	.....
16	Prairie Farm Income.....	458	.....	.....	.....	.....	.....	.....	275	183	.....
17	Canning Crops.....	2,115,366	.....	8,122	.....	383,874	1,439,081	3,994	.....	67,428	212,867
18	Berries for Jam.....	684,377	.....	.....	.....	72,794	159,170	.....	.....	.....	452,413
19	Wool.....	88,562	.....	3,560	578	.....	43,113	.....	27,895	552	12,864
20	Freight Assistance on Alfalfa Seed.....	18,874	.....	.....	.....	.....	18,874	.....	.....	.....	.....
21	White and Yellow-eye Beans.....	405,420	.....	.....	.....	.....	405,420	.....	.....	.....	.....

¹ No provincial breakdown available.² Preliminary.³ Refunds deducted from gross figures in each province total \$94,046. Rebates amounting to \$628,077.85 have not been deducted because the provincial breakdown is not available.

Dairy Products.—(Items 1-5) Price subsidy payments made by the Federal Government are included in prices received by farmers and used for cash income estimates for milk sold to distributors, cheese factories and condenseries, and butterfat sold to creameries.

Hog Premiums.—(Item 7) The quality premiums form part of this price reported by the farmers.

Vegetables.—(Item 17) Cash income estimates are prepared from prices which include subsidies or bonuses paid on canning crops.

Fruits.—(Item 18) Subsidies or bonuses paid through canneries or processors are incorporated in the prices for preparation of cash income estimates.

Wool.—(Item 19) Reported farm price includes bonus on wool quality.

Dried Beans.—(Item 21) Farm price includes the subsidy paid on this crop.

STATEMENT OF RECONCILIATION

CASH FARM INCOMES AND SUBSIDY PAYMENTS, 1945

	(million dollars)
Cash income from sale of farm products.....	1596.0
(excluding direct subsidies)	
Subsidies paid direct to farmers.....	58.2
Total cash income including direct subsidies ¹	1654.2
Supplementary Income ²	6.4
Total cash income from farming operations ³	1660.6

¹ As published by Dominion Bureau of Statistics.

² Includes P.F.A.A., P.F.I.A., and W.A.R.A. (Items 14-15-16).

³ In addition the Dominion Government paid out 24.7 million dollars under feed, seed, fertilizer and lime assistance programs, (Items 8, 9, 10, 11, 12, 13 and 20), and approximately \$6,000 for cheese factory improvement (Item 6).

CANADIAN MEAT BOARD EXPORTS, 1945¹

F. M. SCHRADER

Heavy shipments of beef, mutton, lamb and canned meats and comparatively lighter shipments of bacon and hams characterized the Meat Board export operations in 1945. Increases from the previous year in cattle, sheep and lamb slaughterings and the restrictions placed on the export of live cattle and lambs were reflected in the increased exports of beef, mutton and lamb. Reduced hog slaughterings resulted in lighter bacon shipments although the product of approximately 60 per cent of the inspected hog slaughter was exported.

Pork Products.—Under the 1944-45 Bacon Agreement the Government of Canada undertook to ship to the United Kingdom a minimum of 900 million pounds of bacon and hams during the two year period. The minimum quantity to be shipped each year was 450 million pounds. In 1944 the inspected hog slaughter (from which all exports are drawn) was 8.77 million, the greatest in the history of Canada. Slightly more than 700 million pounds of bacon and hams, which was the product of two-thirds of the kill, were shipped to the United Kingdom. In 1945 hog slaughterings dropped 35 per cent from the previous year. Declining production resulted in reduced quantities of bacon and hams available for export, although 408.5 million pounds were directed to export trade. During the two year period covered by this agreement 1,109 million pounds of bacon were exported to the United Kingdom. This quantity of bacon was produced from the carcasses of nine million hogs.

The quality of Canadian bacon shipped to the United Kingdom during the war years has been well maintained. In 1939, 60.5 per cent of all Wiltshire sides were grade A sizeable. In the succeeding years this percentage dropped

till it reached a low of 46.4 in 1943 and recovered to 59.1 in 1945. This is a good record of quality considering the extremely heavy production during

¹ For further reference see "Wartime Developments in the Canadian Livestock and Meat Trade" by H. K. Leckie, *Economic Annalist*, November, 1945, and February, 1946.

the war years. However, further improvements in quality are necessary to ensure Canada's ability to compete successfully in the post war market. Producers and packers share this responsibility.

Although bacon is the most important pork product handled by the Board, substantial quantities of pork offal, canned pork and casings for sausage manufacture, were shipped to the United Kingdom in the period under review. Reduced hog slaughterings also resulted in reduced shipments of these products.

During the six year period 1940-45 the Meat Board handled 3,141 million pounds of bacon and hams valued at \$644 million, and 156 million pounds of pork offal, canned pork and lard valued at \$25 million. In addition, 2.7 million bundles of hog casings valued at \$3.8 million were shipped to the United Kingdom for use in the manufacture of over 100,000 miles of sausage.

MEAT BOARD EXPORT OPERATIONS

Product	1939-43 Agree- ments ¹	1944-45 Agreements ²		Total
		1944	1945	
(000 Omitted)				
Bacon.....lb.	2,032,173	700,620	408,514	3,141,307
\$	397,296	154,038	92,202	643,536
Pork Offals.....lb.	37,486	13,311	10,121	60,918
\$	4,044	1,575	1,196	6,815
Lard.....lb.	4,412	8,973		13,385
\$	375	1,180		1,555
Canned Pork.....lb.	18,480	33,884	6,518	58,882
\$	5,155	9,660	1,857	16,672
Casings.....bdl.	1,214	847	666	2,727
\$	1,543	1,238	991	3,772
Oxtails.....lb.			808	808
\$			81	81
Beef—boneless.....lb.		55,196	47,599	102,795
\$		11,877	11,692	23,569
Beef—bone-in.....lb.		74,418	138,312	212,730
\$		14,463	28,166	42,629
Mutton and Lamb.....lb.		1,153	10,082 ⁴	11,235
\$		257	2,428 ⁴	2,685
Other Canned Meats.....lb.			126,509	126,509
\$			26,441	26,441
Total Value.....\$	408,413	194,288	165,054	767,755

¹First bacon purchase Oct. 31, 1939, last bacon purchase Dec. 25, 1943.

²Covering calendar years 1944 and 1945.

³Total shipments with values of Meat Board Purchases to end of 1945.

⁴Purchases of 1945 Product. Contract ends Dec. 31, 1946.

Beef.—The first Beef Agreement covered the calendar years 1944 and 1945. The British Ministry of Food agreed to accept delivery of a maximum of 112 million pounds of beef in 1944 and 134 million pounds in 1945. However, by 1944 herd building and the restrictions placed on the export of live cattle resulted in an increase in the inspected slaughter of 33 per cent above the 1943 kill which was 1,020,200 head. Beef exports amounted to 147 million pounds, carcass basis.

In the following year the Ministry of Food agreed to accept delivery of Canada's surplus beef. The maximum quantity of beef specified in the agreement was deleted. The 1945 cattle slaughter was 1,814,000 head, the highest in the history of the Dominion. Exports increased proportionately to 201.8 million pounds, carcass basis.

By agreement, a maximum amount of the beef shipped to the United Kingdom was in boneless form. In 1944 about 50 per cent was boneless beef. This meant that lower grade beef was utilized in this manner. Approximately 80 per cent of the quantity shipped was graded cow, plain and manufacturing beef and 20 per cent was red and blue brand and commercial beef. In 1945 only 30 per cent of total beef shipments was in boneless form. The increase in the export of carcass beef resulted in increased shipments of the better grades.

Mutton and Lamb.—An agreement providing for the shipment to the United Kingdom of a maximum of 20 million pounds of mutton and lamb covers the period July 1, 1945 to December 31, 1946. Export permit restrictions were replaced on sheep and lambs in July, 1945 and by September quantities of mutton and lamb were being received by the Board for export. By December 31, 1945, 10 million pounds had been purchased for shipment under this agreement.

Canned Meat.—Production of canned meat lunch was undertaken in 1944 and by the middle of the following year Canadian packers were producing meat lunch, meat paste, meat spread and blood sausage for shipment to liberated areas of Europe, UNRRA and for Military relief. Production of canned pork, which had commenced in 1942, for shipment to the United Kingdom, was continued although in reduced volume. Canned meat shipments during 1944 and 1945 amounted to 167 million pounds and were valued at \$38 million.

BOOK REVIEWS

Co-operative Organizations and Post-War Relief—International Labour Office, Montreal, 173 pages, \$1.00, 1944.

The Co-operative Movement and Present Day Problems—International Labour Office, Montreal, 202 pages, \$1.00, 1945.

Every public body, organization and nation now engaged in the twin tasks of reconstruction and rehabilitation is basing its hopes for success on co-operation. Not the least among these is the co-operative movement. During the past 100 years its growth and success has been predicated on the solution of problems by mutual understanding and goodwill between co-operative associations and by the willingness and good faith of its leaders. It is not surprising then that the International Labour Office should come forward with these two volumes which call for recognition of the potentialities of the co-operative movement in rehabilitation and reconstruction, and demand for it a place among the institutions now striving for a better world. At the same time, international co-operative organizations are urged to show initiative and leadership in the solution of post-war problems and to aid, in every way, great peacetime agencies like UNO, UNRRA, and FAO.

The first study, which was published in 1944, gives a general picture of the co-operative movement in the years immediately preceding the war. It deals with the nature of co-operative association and the structure of the movement, and provides a general background of co-operative history which is unusually informative and helpful. All this is covered in parts I and II.

The third part of the study considers what the co-operative movement can do in the problem of relief in the immediate post-war period. In this section the state of the co-operative distributing network in Europe is reviewed and it is surprising to learn that it is still, despite the ravages of war, in working shape. It is claimed, too, that members and personnel are ready and keen to re-organize. The estimate of co-operative societies in Europe, not including Germany, Austria, Czechoslovakia and Russia, is not less than 18,000. In addition there are 11,000 agricultural co-operative societies with distributive activities. The study estimates there is a minimum of 111,000 urban and rural distributive units or stores of warehouses available for use in relief operations.

The second volume—"The Co-operative Movement and Present Day Problems"—forms a sequel and complement to the first and the two studies form a single whole. Throughout both works no attempt is made to define a future plan. Rather the presentation is one of material whereby the movement can fit itself into whatever plans are made by other agencies. Part I of the second study considers the possibilities of co-operative action in fields where Canadians are active and most interested, those of agricultural production and fisheries.

International conferences and meetings since the end of the war have emphasized the importance of food and agriculture in any program of reconstruction. Both the Hot Springs and Quebec conferences of FAO noted the role of co-operatives in the vital task of production and marketing of food. An elaboration of this role is presented in Part I. This part concerns itself with the extent to which the co-operatives are equipped to supply important agricultural rehabilitation requisites, such as feeding stuffs, fertilizers and seeds. In the essential field of agricultural credit the place of rural credit societies is important. It is noted that these societies in 1937 numbered 45,000 and covered more than 8½ million holdings in twenty-five European countries. In each country these societies are federated into central banks which provide medium and long-term credit, while the societies themselves handle immediate short-term loans. Marketing facilities in all lines are analyzed and the section ends as follows:

"... as soon as conditions of production and exchange return to normal these various co-operative bodies will be able to resume their habitual functions not only as a vast mechanism of orderly marketing, but as guides and regulators of production."

Employment and the improvement of the standard of living are reviewed in Part II. Visualizing a temporary glut on the labour market through demobilization and transfer from war to peace production, the contribution of the co-operatives to a high level of employment and income is discussed under three heads: (1) co-operatives among the unemployed, (2) workers' productive co-operatives and (3) the contribution of co-operative organizations to the restoration of production of consumer goods in war-ravaged countries. Standards of living are improved when real income is raised and these studies hold that the co-operative form of organization, both producer and consumer, does just that. In the important fields of health and nutrition examples are given where co-operatives took leadership or supported enthusiastically governmental proposals for improvement. Insurance and credit are two other fields where co-operatives are playing an important part and where their influence will continue to be felt.

These two studies will greatly assist in all phases of post-war planning since they should satisfy the need for information on the co-operative movement which might arise in the immediate post-war years. It remains for the leaders of the movement to see that such a need does arise. This task is placed squarely in their hands by the I.L.O. If these leaders wish to make a strong bid for recognition of the movement's possibilities they are supplied, in these two volumes, with ample ammunition. The I.L.O. is to be congratulated on its timely provision of this ammunition—its judicious use is commended to the movement.

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THE ECONOMIC SITUATION

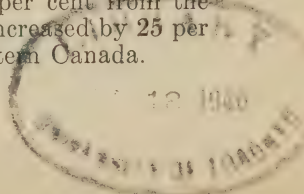
Price Stability Measures.—The Canadian Government has announced that it will maintain price control as long as the present emergency exists. The following four major steps have been taken to effect this decision. A list of all goods and services which continue subject to price control has been issued. A revised system of pricing imported goods has been inaugurated. The exchange rate of the Canadian dollar has been raised to parity with the United States dollar. Subsidy payments are to continue. These measures are designed to improve the effectiveness of price control, to prevent undue increases in prices in Canada and to encourage a greater supply of scarce goods which are generally imported.

Economic forces contributing to upward pressures on the price ceiling include the following: The strong effective, domestic demand resulting from a high level of employment and wages and an accumulation of unfilled wants; the continued shortages of materials and trained labour; rising prices in foreign countries with which Canada has strong commercial ties.

Farmers' Income Tax.—The Minister of Finance, in the Budget for the fiscal year 1946-47, announced a revision in the method of computing income tax for farmers and fishermen. These primary producers will be given the opportunity of having their annual income taxed on the basis of the average of the previous three years. For the year 1946 and subsequent years, all farmers and fishermen who wish to take advantage of this proposal will be required to file returns each year whether or not they have taxable incomes. In 1948 those who have made returns for 1946 and 1947 will be entitled to average their incomes for the three years 1946 to 1948. This measure will provide definite relief for those producers located in areas where crop yields vary to a great extent from year to year.

Grain Exports.—Canada's commitments to provide increased shipments of grain to relieve the famine situation in Europe and Asia have been fulfilled successfully. During the six months ending June 30, 1946, Canada exported 13.5 million bushels of oats and 150 million bushels of wheat in the form of flour and grain. This huge movement of grain and flour was the second largest in the history of the Canadian grain trade and includes the surplus from the 1945 crop and the last of Canada's wartime reserves.

Live Stock Slaughtering.—A smaller livestock population on farms resulted in reduced inspected slaughterings of hogs, cattle and calves, during the first 6 months of 1946. Hog slaughterings totalled 2,373,000 which was 29 per cent less than in the first 6 months of 1945. In eastern Canada the reduction was 12 per cent but in western Canada it was 39 per cent. The cattle slaughter was 668,000 during the period January to June, 1946. This was a 9 per cent reduction, practically all occurring in the East. There were 404,000 calves slaughtered in the first 6 months of 1946, a reduction of 11 per cent from the corresponding period of 1945. Sheep and lamb slaughterings increased by 25 per cent and were 330,000. This increase occurred mainly in western Canada.



SIXTIETH ANNIVERSARY OF THE DOMINION EXPERIMENTAL FARMS

Experimental Farms facilitated the settlement of the West by the popularization of the dry farming technique of summerfallow and the discovery of marquis wheat. These farms have a history of sixty years of service to Canadian agriculture and were established as a branch of the Dominion Department of Agriculture in 1886. Their function, as cited in The Experimental Farm Stations Act of that year is "the promotion of agriculture, by the dissemination of useful and practical information respecting matters connected therewith". Under the present organization of the Department of Agriculture the work of the Experimental Farms is to promote improvements in the practice of farming by conducting experiments and research on practical farm problems throughout the Dominion, and by demonstrating under actual farm conditions the results of such work wherever they can be usefully applied.

The main lines of investigation included livestock breeding and nutrition; dairying; the testing of cereals and other field crops, grasses and forage plants, fruits, vegetables and trees; the study of seeds, fertilizers, plant diseases and insect pests; the investigation of diseases of domestic animals; and "any other experiments and researches bearing upon the agricultural industry of Canada, which are approved by the Minister".

During the sixty years since its establishment the Experimental Farms Service has expanded with the development of Canadian agriculture to the present organization comprising, in addition to the Central Farm, 28 Branch Farms and Stations, 6 Sub-Stations, 8 Laboratories, 157 Illustration Stations and 51 District Experiment Sub-Stations. The work of research at the Central Farm, originally conducted by a handful of specialists, is now allotted to the ten Divisions of Animal Husbandry, Bees, Cereals, Economic Plant Fibre, Field Husbandry, Forage Plants, Horticulture, Illustration Stations, Poultry and Tobacco. In addition, several stations which have served their periods of usefulness have been closed and many lines of work developed on the Farms now constitute the functions of other branches of the Department of Agriculture.

Gradually, with the increase of settlement and the growing complexity of agricultural production, together with the recognition of regional difference in soil, climate and the adaptation of crops and livestock, it became necessary to open new experimental stations, until each major farming district was so served. Later, as the peculiar needs of smaller districts became apparent the practice of conducting demonstrations and trials on a large number of suitably located private farms was adopted. Laboratories were set up at points where peculiar problems, requiring fundamental research were encountered. In this manner the services of the Experimental Farms have kept pace in some measure with continually emerging needs.

Crop Outlook.—Favourable growing conditions in the prairie provinces have resulted in a wheat crop prospect of about 20 per cent above last year's 282 million bushels. At the end of June, the Bureau of Statistics estimated that the Alberta crop would be 27 per cent above the long time yield. The Saskatchewan crop was estimated at 23 per cent above last year and the Manitoba crop at a 3 per cent increase. Heavy rains fell during the first two weeks of July. As a result, crop conditions in Alberta and Saskatchewan have been well maintained and improvements occurred in Manitoba. No serious insect infections have been reported but hail damage has been reported in Alberta and Saskatchewan. The condition of fall wheat is slightly better than last year and the crop is expected to be at least normal.

Feed grain crops in nearly all parts of Canada are in better condition than last year but the condition of hay and pasture is less favourable.

The 1946 fruit crop is expected to exceed last year's production in every case except grades which remain unchanged. The first estimate of the Bureau of Statistics indicates that the 1946 crops of apples, pears, plums, peaches, apricots, raspberries and grapes will be greater than the average production for the 10-year period 1935-44. The acreage of major vegetable canning crops contracted by processors is 29 per cent above the 1945 average.

Business Activity.—Physical volume of production, as reflected in the index published by the Dominion Bureau of Statistics, continued to follow the downward trend which commenced early in 1944. Reconversion and shortage of materials were reflected in a steady decline in the manufacturing index from 202·8 in January, 1946, to 186·9 in May. Activity in distribution followed a similar movement and the index declined from 198·7 in January to 173·4 in May. Shortages of building materials were reflected in less than normal new business obtained by the construction industry in May. Mineral production and output of electric power have increased during the first 5 months of 1946. The index of electric power output rose steadily from 151·8 in January to 166·5 in May. The index of mineral production increased from 119·7 in January to 155·8 in May.

Wholesale prices continued their upward movement during the first 6 months of 1946 and the index was 109·1 in June. The June price index for farm products was 109·5, an increase of 2·5 points from the February index. The cost of living index advanced 1·6 points in June. The major part of the increase was due to higher prices for milk, fresh vegetables, eggs and meat.

AGRICULTURE AND WORLD TRADE NEGOTIATIONS

L. LORINEZ

Introduction.—Any intelligent discussion of what is agriculture's stake in the impending world trade negotiations must take into consideration not only the changes brought about by the two wars, but also the broader economic setting that deeply influences foreign trade in agricultural commodities. The following discussion proposes to outline the most important shifts in world economy and social thinking arising out of the last war. Their influence upon future trading systems and upon world agriculture will be discussed under the following headings:—

Shifts in national debts

Shifts in balances of international payments

Changes in population, production patterns and government systems.

The above changes are analyzed to focus the problems that the forthcoming international trade conference will be called upon to solve. A preliminary meeting has been called for October, and the full conference is scheduled for next spring.

It would be idle to speculate on what kind of world trade system will emerge from these talks. When the negotiations begin, however, many people not

specialized in international trade, will find it difficult to interpret the news correctly. An attempt will, therefore, be made in a second article to be published in the next issue, to give a short outline of various trading systems, together with a sketchy critical appraisal of their performance record, particularly as regards trade in agricultural commodities.

Shifts in National Debts.—Wartime expenditures and the cost of social security have resulted in the accumulation of considerable national debts in most countries of the world.

In the United Kingdom, the 1945-46 budgetary deficit reached the huge sum of over 2.3 billion pounds sterling¹ and had to be covered by borrowing. In 1900 the British national debt totalled a little over £0.6 billion. At the outbreak of the second world war it was £8.5 billion, and by 1946 it exceeded £24.0 billion. This means a debt of over £521 per head of population.

Taking Canada as another example, a deficit of \$1.74 billion for the financial year 1945-46 caused an increase of equal amount in the nation's net debt. Twenty years ago, the deficit from March 31, 1925 to March 31, 1926 was reduced by \$27.7 million. Ten years ago, the net national debt was increased from 1935 to 1936 by only \$0.16 billion. The annual rate of increase prior to 1941 was moderate.

Total net national debt stood at about \$2.43 billion in 1925, \$2.85 billion in 1935, and \$3.27 billion in 1940. From that year on, it advanced by leaps and bounds:

Year	Billion dollars	Year	Billion dollars
1941	3.65	1944	8.74
1942	4.05	1945	11.30
1943	6.18	1946	13.04

On the basis of 1941 population figures, the per capita net national debt increased from about \$318 in 1941 to over \$1,130 by 1946.

The main causes for the recent accumulation of national debts in most countries of the world have arisen from two sources: expenditures for carrying on the war and an increase in social security expenses. Society has developed a new conscience and Government responsibility for the individual's welfare has imposed inevitable burdens upon national treasuries.

In Britain, the average expenditure on social services was less than £1 per head per year in 1900, whereas by 1946 it advanced to £13. The *Economic League* in publishing these figures in 1946, concludes: "We have got to fight as we have never fought before for our future as a great trading nation."

In New Zealand, the 1945-46 budget contained provisions for social security expenditures amounting to £22.5 million out of £105.4 representing total disbursements for the year.

In presenting the budget to the Federal Parliament of Australia, on September 7, 1945, the Treasurer pointed out that the cost of the social security program was expected to represent almost one-half of all disbursements for the year, with the exception of war expenditures.

There have been very substantial increases in social welfare expenditures in other countries as well. These, together with war spending, have resulted in heavy tax burdens. In Britain all taxes, local and national, direct and indirect, work out to about £70 per head per year of the population, compared with £4 in 1913.

In order to be able to carry these heavy debts, national income must be high. Failing this, taxes required to service the debt would represent so large a percentage of people's income that private initiative would be seriously impaired.

The most effective way of advancing national income is by raising production levels. Once production levels are increased, markets must be found for

¹ At present rates £1 equals \$4.02.

the resulting surplus goods. While a few relatively under-developed countries may find domestic markets for most of the additional output required, this is not the case with industrially well advanced nations.

In the case of Canada, there is little hope of finding a domestic market for most of these surplus products. A population in excess of 100 million people would be required to make full use of farm produce and timber resources that are now placed on the market each year.² Actually, Canada has only about 12 million inhabitants at the present time. Britain is even more dependent on foreign markets. The New Zealand Minister of Finance, when introducing the 1945-46 budget, stressed the need for building up exports "to pay for imports and encourage manufacturing in order to provide employment."

This means that in order to maintain a high national income and provide employment, a large portion of the surplus goods produced must be marketed abroad. In Canada, foreign trade accounts for about one-third of the national income, in some other countries for a much higher percentage. Indebtedness arising from the last war compels most nations to increase their national income by means of exports, and at the same time to avoid increasing their debts. At the present time, this end is achieved by keeping imports at the lowest possible level. As to the future, the following statement published recently in a British official release may be of some significance:

"In the immediate years ahead, Britain has a colossal task to recover from (wartime) losses. Above all, she will have to plan her imports and exports with the greatest care, so as to make them jointly bring her back most quickly to a normal position."³

Similar warnings have been sounded in many former creditor countries.

Shifts in Balances of International Payments.—The internal debt of almost all important countries of the world increased greatly during the war years. Although there are limits to the internal debt that a country can carry, payments and repayments of interest or principal are merely transfers of money inside the country. This is not true in the case of foreign debts and that is why almost every country in the world is anxious to avoid their accumulation. Equalizing receipts from abroad with payments to foreign countries is the essence of the trade balance problem. Since nearly every country in the world is now making plans to expand exports, while the actual policies being pursued by most appear to be planned to keep imports down to a minimum in order to restore equilibrium, the problem of finding paying markets for planned increases in export goods is the crucial one facing planners of future international trade systems.

What happened to the trade balances of belligerent nations can be illustrated by the case of the United Kingdom, Germany and France, which were the foremost buyers of farm produce before the war. The first two countries in 1938 accounted for the following percentages of total world imports of specified commodities:

Wheat and flour	41	Beef	78
Butter	93	Pork and bacon	87
Cheese	63	Eggs	82

Before the last war, Britain had overseas balances totalling some £2 billion. Today, the greater part of these assets is gone; instead, the United Kingdom owed more than £6 billion abroad early in 1946, a debt of £130 per head.

The prospective problem of future German trade balances is one of the major question marks in European reconstruction. If victorious nations with almost intact productive resources are confronted with heavy deficits in their balances of trade, it is not hard to imagine the effect of extensive wartime destruction and dismantling of German industrial capacity upon that country's future foreign trade accounts.

² Address by Hon. J. A. MacKinnon, Minister of Trade and Commerce, Ottawa, April 10, 1946.

³ *United Kingdom Tariffs and Imperial Preference*, October, 1945.

The deficit in the international payments of France during 1946-50 is estimated at 6,150 million U.S. dollars.⁴ This figure is based on "essential imports" and "probable" exports. Owing to this prospective short-fall, the French import program is naturally an austere one.

Even though the estimate foresees liquidation of the greater part of French public and private mobilizable foreign assets, and the accumulation of heavy foreign indebtedness, available foreign means of payment will not be sufficient to enable the country to carry out its Five-Year reconstruction plan. The balance-sheet shows the following picture:

	Million \$
Public and private gold and currency assets	3,000
Reparations and credits from countries other than the U. S.	940
Recently granted U. S. loan	650
Expected loan from International Bank	500
	5,090
Uncovered deficit	1,060
Estimated total deficit	6,150

Under these circumstances it is understandable that the French Government has reserved the right, when signing the United States loan agreement, to control imports so long as the balance of payments remains unfavourable.

Netherlands import needs during 1946 are estimated at 2.0-2.3 billion guilders (1 gilder equals 38 cents) compared with anticipated exports of about 0.6-0.7 billion, leaving a deficit of 1.3-1.7 billion.

The final result of all these dislocations is that in the postwar world the United States has emerged as the most important creditor nation while Canada may become the next in importance if present large scale lending activities continue. Former creditor nations: the United Kingdom, the Netherlands, France, and others, have lost or are losing most of their foreign assets. As a consequence, they will not be able to balance their payments accounts with income from foreign investments.

The significance of these shifts is obvious if we consider the following few facts:

The average total value of exports from all countries⁵ of Europe for the 1934-38 period was about \$5,800 million in terms of old U.S. gold dollars.⁶ Imports were valued for the same period at 7,525 million gold dollars. Thus, about 1,725 million gold dollars' worth of goods was paid for by means of services and income from interests and dividends abroad. The United Kingdom imported goods for 2,332 million gold dollars and exported for 1,321 million gold dollars. The difference of 1,011 million gold dollars represents the lion's share of the European import surplus over exports, as shown above.

France accounted for roughly another 300 million gold dollars. Average imports during 1934-38 reached about 884 million gold dollars, compared with exports valued at \$589 million. The Netherlands supplied about \$118 million, with imports at 428 million gold dollars, and exports at \$310 million. Italy, Belgium and a few other countries made up the balance of the gap of 1,725 million gold dollars between imports and exports.

All these countries derived huge sums from interests and dividends on their foreign investments before the war which enabled them to import more than they exported. This income reached the following average yearly figures in the case of two countries:

Country	Period	Million gold \$
United Kingdom	1934-37	574
France (and colonies)	1934-36	130

⁴ The London *Economist*, June 8, 1946.

⁵ Except Spain, which was engaged in a Civil War at that time.

⁶ *Statistical Yearbooks of the League of Nations*, 1937-38 and 1939-40.

In addition to this source, capital transactions and services helped to fill the gap and maintain imports at high levels.

On the other hand, during 1934-38 the United States imported annually goods valued at 1,307 million gold dollars and exported 1,551 million gold dollars' worth—an excess of exports over imports averaging 244 million gold dollars per year. This disparity is likely to increase materially in postwar years. The following statement was made in this respect by the Secretary of Commerce in May, 1946, in observance of the "National Foreign Trade Week": "During the war our industrial plant was expanded far beyond its pre-war capacity, and we shall need foreign markets more than ever to absorb the increased output. If our markets abroad were limited, we would find our internal problem of providing full employment greatly intensified after the initial post-war boom. An export volume of 10 to 15 billion dollars would mean a continuing high level of employment at home."

If we assume that the price of goods exported from the United States has only doubled in comparison with 1934-38 gold-values, the above target needed for maintaining high employment in the United States means that exports from that country will have to be increased more than threefold. At the same time, their import needs are unlikely to advance in anything like similar proportions due to wartime developments aimed at replacement of scarce foreign commodities by new products. Synthetic rubber is one case in point.

A similar statement was made by the Canadian Minister of Trade and Commerce to the Annual Meeting of the Canadian Manufacturers' Association in Ottawa, on April 10, 1946: "Our manufacturing industries have greatly expanded during the war. They need new and bigger markets. Never in our history has world trade been so important to us as it is now."

It is thus obvious that the new world creditors, the great North American countries, are determined to drive with increased energy for further expansion of their exports. They also recognize the need for larger imports, as a means of enabling prospective buyers to pay for their North American purchases. This recognition, however, is not adequately supported by actual needs; on the contrary, wartime diversification of their production patterns has made them even less dependent on imports from abroad than before the war.

Pre-war creditor nations, with the exception of the United States, had trade balances that always showed a large surplus of imports over exports, the difference being largely made up by services and income from investments abroad. Having lost their investments in the war, these nations must now keep their imports down to minimum levels, if they wish to balance their foreign trade accounts.

Present creditor nations are large, powerful geographical units richly endowed with natural resources and geared to high production levels as a result of their wartime efforts. To maintain high employment, they plan to increase their exports to an impoverished world to several times the pre-war level. To replace the investment income lost by former creditor nations, North American governments are now extending liberal long-term loans to these nations. These loans will have to be repaid eventually. They can only be repaid if recipient nations' income from what is left of their investments, together with the value of goods and services they are able to export, is in excess of what they have to pay for current imports of goods and services. To this end, they must husband imports and increase exports to creditor countries whose import needs are very limited. This is the real problem that the forthcoming conference of the International Trade Organization of the United Nations will have to solve.

Considering the possible effects of wartime shifts upon international trade in farm produce, the most important change is in the degree of agricultural self-sufficiency.

Pre-war creditor nations were heavy importers of farm produce. Great Britain alone absorbed the following percentages of world food imports in 1938:

Wheat and flour	33	Beef	71
Butter	78	Pork and bacon	79
Cheese	52	Eggs	57

During the war these nations have increased considerably their domestic output of many farm products and are even now making plans for a much greater degree of future self-sufficiency than ever before.

On the other hand, the United States and Canada are producers of large food surpluses, and have very materially expanded their food output since the beginning of the war, while their food imports underwent relatively little change. This is illustrated by monthly average values of agricultural exports and imports from the United States.⁷

Monthly Average	Absolute Values		Quantity indices, Jan. 1924-Dec. 1929=100	
	Exports	Imports	Exports	Imports
	Million dollars		Index numbers	
1932-33.....	118	97	54	68
1936-37.....	233	241	76	118
1940-41.....	330	234	110	128
1944-45 (prelim.).....	1,046	330	206	84

In consequence, new markets must be found for prospective food surpluses. Potentially, the market is almost unlimited and the United Nations Food and Agricultural Organization is now making strenuous efforts to focus attention on the need for providing adequate diets throughout the world. To translate potential into actual markets, it is necessary, however, to provide the required means of payment for prospective users. This is a balance of payments problem deeply rooted in foreign trade relationships. Attempts at restoring balance in international trade and payments is, therefore, a primary concern for farmers throughout the world.

Shifts in Population, Production Patterns and Economic Planning.—

The difficulties outlined above are further aggravated by the general decline, or at least slow growth, of populations in western nations. These nations are at present the most important trade partners for creditor countries.

More prolific nations, such as India, China and the U.S.S.R., are potential customers. In their case, however, difficulties inherent to their production patterns are present. The first two, owing to relative lack of industrial plant, can furnish in exchange for what they need from abroad only a few primary products and such small items as handicraft articles and art objects, which they can produce advantageously owing to the existence of inexpensive and abundant labour. The limitations of such a trade are obvious.

In the case of the U.S.S.R., relatively few lines are available for export to North America, and North American countries need few products of Soviet origin. On the other hand, Soviet demand is mostly for capital goods, and the question has often been asked in trade publications appearing in English, whether it is good policy to promote export of equipment that will turn out competitive goods.

Finally, extensive nationalization of basic industries in many countries and the application of various degrees of planned economy from Japan to the Netherlands and from the Straits of Magellan to Mexico, are another aspect

⁷ *Foreign Agricultural Trade*, Office of Foreign Agricultural Relations, U.S. Department of Agriculture, Washington, D.C. June 15, 1946 issue.

of future trade relations. The possible effect upon private trade of the manifold governmental and semi-governmental agencies is a matter of grave concern for the conveners of the forthcoming international trade conference.

The world trade system emerging from the prospective trade talks must be supple enough to allow for an ample exchange of goods between free enterprise and nationalized economies.

TRANSPORTATION AND AGRICULTURE

E. P. REID

Agriculture is only one of the several broad divisions of the production field interested in transportation facilities and costs. Nearly a quarter of the traffic on Canadian railways consists of farm products, but transport services are not organized to carry the needs and products of the farming community alone. However, any study of the development of agriculture necessarily involves careful reference to the basic factors of transportation.

As a result of rapid industrial development during the recent war and in earlier years, Canada is now attaining a mature economy, with manufacturing largely on a scale above the mere assembly of parts, and a growing proportion of the population engaged in commerce, manufacture, and the extractive industries. But agriculture remains a leading source of wealth, and the basis of livelihood for 20 or 25 per cent of the Canadian people. In any case, farming has a more general distribution in all areas than has any other major industry. The railways, as well as the waterways and highways, link together all agricultural areas and interlink them with the manufacturing areas. The story of the interdependence of transportation and agriculture is as old as Canada.

Settlement.—The relationship of railways and settlement has been frequently reviewed by students of Canadian history. The considerable proportion of fixed assets in railways' capitalization suggests either that they should be constructed in territories where traffic potentialities are already discernible or that the promoters should have at their disposal considerable financial resources to tide over a long development period. In Canada railway construction has typically preceded settlement or the extensive establishment of industry, but the governments, Dominion and, in some cases, provincial, have largely made the capital available. This has been the case for our three transcontinental railways and the Intercolonial and Hudson Bay Railways, as well as Ontario, Alberta, and British Columbia railways.

Railways, once constructed, frequently did not have to wait long for traffic. This is indicated in a series of maps presented by W. A. Mackintosh in his contribution to the Frontiers of Settlement Series, *Prairie Settlement, the Geographical Setting*. Combining data from the quinquennial census and the record of railway building, he shows for the Prairies the extension of railway line and of settlement in five year stages from 1886 to 1931. Experience indicates that the territory within 10 miles on each side of a railway is that which, for grain farming, is suitably served by the line. On this basis it is evident that the patterns of extension of railways and of settlement have been quite similar over the years. The presently settled part of Manitoba was substantially blanketed by railway service by 1906, but the extension continued in the southern arable halves of Saskatchewan and Alberta until after 1931.

Mackintosh points out that, in the true prairie, settlement in the first few years of this century considerably outstripped railway building. However, by 1911 the two northern transcontinentals had crossed the provinces, and settlement of the Park Belt was clearly stimulated by the pioneering of the railways. The years of the first Great War and subsequently until 1925 saw a notable retardation of development, but in the ensuing decade there was a mileage increase

of 25 per cent in Saskatchewan and 18 per cent, attained more rapidly, in Alberta. On the other hand, eastern and British Columbia railways were built by 1917, there having been no new extensions since.

In summing up the significance of railways in the West, Mackintosh says: "The inhabitant of the Prairie Provinces, like the inhabitant of the inland plains, is peculiarly dependent on railways. His agricultural system depends on railways communication The railway with its unfailing accompaniments, the loading platform, the two to five grain elevators, the post office, general store, machinery shed, and branch bank, closes the circuit through which the power of the world's economic organization flows into the pioneer community Beyond the end of steel there is only such settlement as waits month by month or year by year for the coming of the railway."

The present post-war era finds interest in land settlement again to the fore. And not always can the settler find new land well served by railway or highway. In the Peace River country, the areas between the railhead at Dawson Creek and Fort St. John and the lower Peace in the vicinity of Fort Vermilion are already settled without benefit of near rail service. Furthermore the whole area is very conscious of the absence of direct rail (or highway) access to the Pacific Coast, and the route via Edmonton adds at least 500 miles or 40 per cent to the trip. In northern Saskatchewan, and in colonization areas of Ontario, Quebec, and New Brunswick the vital role of the railways is still as apparent today, even if in some cases only by reason of the handicap encountered by settlers distant from the line. Even the remedy is not easy, as frequently traffic would be demonstrably low even after the stimulus afforded to farmers near any new branch line.

Traffic.—One fifth of the tonnage carried by Canadian railways consists of agricultural products (crops). Mine products and manufactures each account for about one-third, with the rest being divided between animal and forest products. However, Quebec and Ontario, with about two-thirds of the nation's traffic, more nearly reflect these proportions than do the extreme areas of the country. Each central province had about 40 per cent of its traffic in manufactures and over 30 per cent in mine products. But while Ontario's proportion of agricultural products is the same as for Canada, Quebec's proportion is only 8 per cent, with forest products being relatively more preponderant than in Ontario.

The Prairies have 60 per cent of their traffic in crops, 40 per cent being in wheat alone. One-fifth consists of mine products, largely influenced by Alberta coal, which is over a third of that province's tonnage. Maritime tonnage carried is half mineral, mostly coal. One-quarter is manufactured goods and about a fifth forest products. Agricultural products are a steady 6 or 7 per cent. Similarly in British Columbia mine and forest products constitute about three-quarters of the tonnage, and agricultural products only 5 per cent.

The preponderance of bulky shipments—crops, mine and forest products—in Canadian railway traffic as a whole, particularly on long hauls as for export, is one of the basic factors of railway operation here. Gross revenue per ton-mile is notably lower than in more densely settled parts of Europe and America. The significance of this circumstance perhaps outweighs those of (1) dispersal of population and industries, (2) existence of such non-traffic producing railway "bridges" as the British Columbia mountains and the wildernesses between Sudbury and Manitoba and between the Maritimes and Quebec, and (3) the arduousness of winter operation, all peculiar in some measure to the Canadian railway business. How do these affect the service the Canadian farmer obtains from the railways and what he pays for it?

Rates.—The answer to this question has in the past tended to be obscured in political and sectional controversy. The grain growers' movement in the West 40 years ago, the farmer elevator companies and co-operatives of later decades, and the Progressive Party in the 1920's were all motivated in part by the desire to join issue with the railway colossus.

Nevertheless, some objective facts may be noted. Canadian agriculture exports one-quarter of its products. The proportions of wheat, hogs, cheese, and apples are even higher and the first three are produced rather far from the seaboard. As Canadian wheat moves export to a far greater degree than United States wheat, so the freight rates applicable from shipping points to Fort William are only about 60 per cent of those applying on similar mileages from North Dakota and Montana to Duluth. A similar comparison on westward movement to Vancouver and Seattle indicates rates on Canadian routes are about 55 per cent of those in the United States. Furthermore until 1925, when present grain rates were established, the trend was downward, an exception being the period 1918-24. In the 40 years following 1886 grain rates to the Lake-head were reduced by half or slightly more. It has always been a principle of rate-making that concessions are granted where traffic in volume is available. Both the gross and net revenue Canadian railways derive for hauling grain at these low rates are indeed substantial.

Canadian wheat producers compete with those of Argentina, Australia, and a number of other countries where hauls to ocean ports are very much shorter than in this country. However, the bulk handling of the product is characteristic of North America, and the continued maintenance of such low freight rates as in Canada is made possible to some extent by the simplicity of handling. If a car of wheat is tipped onto its side, as is the practice at a terminal elevator, it empties itself in a minute or so. Loading through spouts is almost as easy.

Traffic in Canada moves on the basis of the 10 classes of the Canadian Freight Classification, although rates applicable to a class are different in different territories. Fifth class, including general merchandise moving in carlots, is the eastern standard in the sense that rates for higher classes are multiples of those for fifth class and rates for lower classes are fractions. In the west, fourth class is basic. The farming community is primarily interested in the lower classes, such as sixth, including machinery moving on flat cars; eighth, including cereals and cereal products, potatoes, and vegetables; ninth, livestock; and tenth, including lumber and coal.

Whilst this classification covers all products, yet three-quarters of the country's rail freight moves on commodity rates, bearing no definite relation to class rates. Such rates are set on a commodity with the object of making traffic move whilst returning something more than out-of-pocket expenses to the railways. Sometimes such rates are applicable only to particular routes. The vast bulk of agricultural shipments moves on commodity rates and much traffic which shippers believe to be susceptible of development does not materialize if the carriers cannot be persuaded to afford commodity rates even on an experimental basis.

Transportation costs are one of the greatest factors in marketing of farm products, both domestically and internationally. It has been announced that the Canada-United States trade treaty will be renegotiated this year and that under Presidential Powers the United States may reduce its tariff rates as much as 50 per cent. On some products such a downward adjustment might be relatively small in contrast to a possible adjustment in freight rates. For example, fruits and vegetables, generally speaking, flow from winter-producing areas in the southern United States to Canada, and they are afforded commodity rates to facilitate the very considerable movement. Since opposite traffic, by reason of high customs tariffs in the past, has hardly existed, only class freight

rates would now be immediately available for any southward movement. Horticulturists in Canada who take an interest in United States markets, particularly for late maturing crops, must seek adjustments in railway tariffs as well as customs tariffs.

It is notable that railway rates are one of the clearest examples of rigidity in the whole economy. Although several general upward adjustments were applied during and after the first Great War, and later downward adjustments until 1925, the structure has been altered only in minor degree since. This is despite increased labour and material costs in the recently concluded war. Agricultural prices, on the other hand, are amongst the most elastic. The result is that in times of low and falling farm prices transport costs are a rapidly increasing toll on the producer, definitely accentuating the shrinkages of his standard of living. Conversely, in a period of price increase such as has prevailed in recent years, transport costs are of progressively lessening consequence to shippers and buyers. Railway traffic is as variable as rates are rigid, and because of the high degree of overhead costs incurred in railway operation, our lines have seldom in the past been more prosperous than they have been hauling swollen wartime traffic at the same rates as in the depression.

Service.—It can be noted that, in addition to freight rates which allow his traffic to move with varying degrees of economic ease, the Canadian farmer is afforded various facilities by the railways for the special handling of his products. In rolling stock, there are refrigerator cars for perishables—meat, butter, eggs, fruits, and vegetables; stock cars especially for cattle or hogs or poultry; express cars to carry berries, eggs, meats, at passenger car speed. There are such terminal facilities as stock yards, abattoirs, loading pens, fruit terminals, as well as sidings and loading platforms of various sorts. The farmer is assured by law equal consideration with large shippers in the company's fulfilling by rotation of requests for cars to load. The lines maintain agricultural departments and in some instances demonstration farms. They have in the past operated farm labour placement bureaus, and have eagerly carried a flow of immigrants admitted to Canada on condition that they worked in agriculture.

War Situation.—Tonnage hauled by Canadian railways doubled from 1939 to 1944. The increase for agricultural and animal products alone has been somewhat less. In the one case this is accounted for by the preponderance of wheat, the production of which is somewhat stabilized and the proportion exported is high in peace or war. In the case of animal products a gradual increase totalling 60 per cent has been recorded in the six years. No one item in this group stands out as showing an extraordinary increase.

Early in the war a transport controller was appointed by the Government to supervise the railways and assist them in carrying the large war traffic in the most rapid and effective fashion. This official has had as an outstanding problem the maintenance of the flow of wheat and other food to seaboard. In several years wheat exports have been every bushel that could physically be moved to dockside. Of course there were ship shortages also, the alleviation of which was a responsibility of the British Ministry of War Transport, with collaboration of appropriate Canadian Government departments. Domestically, a recurring problem was supply of special equipment, particularly refrigerator cars. The traffic of perishables was up by reason of both swollen exports of bacon, beef, and cheese and enhanced purchasing power affecting demand within Canada for relatively expensive protective foods.

It is customary to think of transportation costs as being an expense for the primary producer both on the goods he ships to market and on the needs he buys from manufacturing areas. The farmer farther from centres of population and national or world markets either accepted a lower standard of living or was compensated by exploiting more fertile land or cheaper land, or in some fashion producing more economically. In addition, he produced such products

as could bear economically the burden of transportation costs. Types of farming thus reflected aspects of the basic transportation situations of various areas as well as fertility, types of soil, climate, population density and perhaps tradition. Thus, the extensive agriculture of the west produced not only the surplus grains of the country but also many of the animals that ate the grain. In the east grain production was largely for feeding on farms where produced.

Dominion wartime policy effective in 1941, included provision for paying all or most of the freight on feed grains moved from the Prairies to other provinces east and west. In $4\frac{1}{2}$ years ended March 31, 1945, \$46,852,000 had been expended under this policy. In the period the production of hogs in all parts of Canada increased many times, encouraged also by other government policies. Meanwhile the acreages sown to grains in the east have tended to decline. There is no doubt some relationship, and, except for the expense incurred by the national treasury and physical limitations of railway capacity, distance between western grain fields and eastern feed stalls has been wiped out.

Similar Dominion policies of paying or largely defraying freight costs apply to fertilizers and lime. By paying large proportions of freight costs between factories and distribution points, the government has made it possible for farmers almost everywhere to obtain fertilizer of the same kind and grade at approximately the same cost per ton. The cost of the policy in 1944 was \$401,000. Assistance in lime distribution is shared equally with the provinces. The Dominion share in 1944-45 was \$156,000.

Highway Transport.—Consideration of rail transport is only a beginning of the study of agriculture's interest in transportation. Many farmers ship daily by truck and perhaps only once or twice a year by rail. In the east even purchased goods may move to farmers largely by truck. In 1938 the Ontario Agricultural College participated in studies of both milk and cream transport by truck. These analyses indicated the cost of the service to producers and also problems of the operators of the trucks, including considerable overlapping and operation at less than capacity. It was also shown that railways no longer haul much milk to Toronto. Wartime conditions and regulations have tended to alleviate truckers' problems to some extent.

Water Transport.—Canada is notable for the great length and the narrow width of its developed area, necessitating undue length in its railway lines in relation to potential traffic. There is, however, a great mitigating factor, the piercing of the continent to its mid-point by the Great Lakes and St. Lawrence waterway, which flows past the most densely settled and industrialized sections of this country and the United States. Water transport is basically cheaper than land haulage, and during the eight months of navigation shippers take full advantage of the economy of lake and river rates both for movements between eastern points and between western and eastern areas. The railways have for many years recognized the effect of this competition by granting lower lake-and-rail and even all-rail rates in the summer, and, in the case of the Canadian Pacific Railway, by operating ships on the Great Lakes. A very high proportion of prairie grown wheat moves export by water from Fort William, and much merchandise moves westward to western producers on the inland waterway.

The lapping of the world's oceans on Canada's coasts has been at least part of the reason why Britain has often seemed economically closer than the United States to producers of surplus farm products in Canada. Thus, Annapolis Valley apples have frequently been loaded on ships from the orchard and moved direct to British ports. And the country's cheese industry is concentrated to a considerable extent within 200 miles of the ocean port of Montreal. From the opposite point of view it might be indicated that the basic economy of ocean transport explains in some degree why Argentina, New Zealand and Australia,

many times farther from Britain, are very effective competitors with us in supplying meats and dairy products to that country; the slight additional cost of a longer voyage is not highly significant in the landed cost in Britain.

Air Transport.—On March 26 an air cargo of strawberries, equal to half a railway car, was landed in Toronto after an overnight flight from Texas fields, and consumers had the fruit on their tables 24 hours after it was picked. The usual rail express journey from Louisiana is 48 hours, and from more-distant Texas, where the crop is earlier, the required rail transport time is so long that Canada does not generally receive the fruit from that state. It is intimated that this traffic, experimental this year, will be regular weekly or semi-weekly to Toronto, perhaps Montreal, and to many northern United States' cities in 1947. Lettuce and other perishables have been flown transcontinentally to some extent in America without benefit of ice, and there is reason to believe consumers will pay at least some premium for field ripened stock in the good condition which is possible after an air journey.

The future of air transport in distribution of farm products in general cannot as yet be discerned clearly, however. Ten years ago when Canadian airlines carried more freight than those of any other country, the annual traffic was only 13,000 tons, but 1/60 of 1 per cent of that moving by rail, and 1/16 of 1 per cent of that passing through our canals. More recently, commercial Canadian movement of air freight has declined, but probably the potential for resuming substantial traffic at attractive rates has increased by reason of wartime developments in aviation.

Research.—Scope for research in the field of transportation of agricultural products is considerable. In 1933 the Advisory Committee on Social and Economic Research in Agriculture of the Social Science Research Council suggested some 47 projects, many of which are applicable to Canada. Several of these pertained to rates and rate making. Others concerned highways and waterways. A most interesting group of 15 subjects pertained to the localization of production and marketing and to area relationships. Number 43 is "Adjustments in Farm Organization Following Rate Changes". Hurried attention has been given above to the adjustment in the rates on feed grain from western to eastern Canada down to zero; it is clearly indicated that research into the matter might better precede even so cautious a conclusion as here tentatively stated.

Transportation in many of its aspects is an extension of the field usually embraced in marketing economics. However, it has its own particular constants and variables, and in its causal aspects relates also the economics of production, prices, and land.

LEASING ARRANGEMENTS IN ALBERTA

J. R. S. JORGENS

Information on the type of leasing arrangements commonly found in Alberta was obtained from a farm business and management study in three representative farming areas in Central Alberta. The areas are located in the vicinity of the towns of Gadsby, Drumheller, and Innisfail. A mixed type of farming predominates around Gadsby, a grain type at Drumheller, and a livestock type in the vicinity of Innisfail. It was found that approximately 77 per cent of all leases were of the crop share type, whereby the tenant turns over a stated portion of all the crops to the landlord but none of the proceeds from other farm enterprises. Only six per cent of the farms were leased on a straight cash payment basis. Fourteen per cent of the leases were combination crop share and cash leases. The remaining three per cent of the leases showed many variations. These included leases where the lessee was the son of the landlord and was

given special privileges, such as use of the landlord's equipment. There were few leases which covered joint ownership of livestock providing for sharing directly in the returns from the livestock enterprise.

The two-thirds tenant and one-third landlord crop share lease proved to be the most common type of rental agreement. The landlord in most cases receives one-third of the crops delivered at the elevator. Out of these returns he must pay taxes, building and fence repairs, and fire insurance. The tenant provides the machinery, equipment, livestock, labour, and pays all the operating expenses. For these contributions he receives the use of the house, buildings, and pastures, two-thirds of all crops and total returns from all other farm enterprises. More than 87 per cent of the crop share leases, or approximately 66 per cent of all types of leases, were of this type. There was about the same proportion of the one-third—two-thirds crop share leases in all three types of farming areas. This fact indicates the part which custom has played in determining leasing arrangements in Alberta.

As would be expected, the wide application of one type of lease to a variety of farming conditions resulted in a great variation in proportionate returns to tenants and landlords. Under average yields and prices, a Gadsby landlord renting a mixed crop—livestock type of farm on a one-third—two-thirds crop share basis would receive approximately five per cent return on his capital; whereas, the tenant not only would receive nothing on his capital, but also less than \$600 for his labour. This wage of \$600 is the average over a long-time period for a married hired man and the five per cent is the approximate alternative rate which could be earned on money invested in farm mortgages. With the same one-third—two-thirds crop share lease in the Drumheller grain area, the landlord would receive five per cent on his capital investment, and the tenant would obtain approximately 11 per cent on his capital in addition to a cash wage of \$600. The landlord of a livestock farm in the Innisfail area under a similar crop share agreement would receive less than one per cent on his capital; whereas, the tenant would receive approximately 11 per cent on his capital invested in the farm business, as well as \$600 a year as a wage. In this case the landlord's return would be much less than the five per cent. It is evident that this one-third—two-thirds crop lease is not satisfactory for all types of farming and classes of land in Alberta.

There was some evidence that adjustments in the one-third—two-thirds crop share leases were being made. About 10 per cent of the leases examined, most of which were in the Innisfail area, provide for the tenant to pay either cash rental or taxes in addition to the usual third share of the crop. Downward adjustments in rents were in evidence in the Gadsby area—four per cent of the crop share leases were on the basis of one-quarter share of the crop to landlord and three-quarters to tenant.

Four per cent of the leases examined were of the half-and-half crop share type. The landlord pays real estate expenses, such as building, well, and fence repairs, fire insurance and taxes; and in addition, supplies all the seed grain and pays half the harvesting expenses. The tenant pays half the harvesting expense, all farm labour charges (except skilled repair labour on real estate) and all other farm operating expenses. The crop is shared equally. One variation of this lease is where the landlord supplies a fully-equipped farm. In this case the tenant has no capital but shares the crops on an equal basis. Here, however, the landlord supplies only one-half of the seed with the usual real estate expenses such as building, well, and fence repairs. The tenant supplies one-half of the seed and pays land taxes, labour and all other farm operating expenses.

The remaining types of farm leases contained various leasing terms. Among these were provisions for varying the share of the crops, provisions for renting pasture land and sharing hay crops, and special leasing consideration extended to the tenant where the landlord was a relative.

RESEARCH IN CO-OPERATIVE ORGANIZATION

J. E. O'MEARA

In one section of the Report of the Royal Commission on Co-operatives the following tribute is paid: "The most important single source of information concerning Canadian co-operative development is the Marketing Service, Economics Division, Department of Agriculture, Ottawa".¹ Naturally, this statement is most gratifying to those in the Division who initiated and maintained the records of co-operative associations since 1929. Now that the war is over and people everywhere are turning to reconversion tasks these records will provide a basis for analysis which necessarily was allowed to lapse during the last six years. Thus, there is a job to be done and a review of what has been done would seem logical before assessing future projects.

Published Bulletins.—Shortly after the establishment of the Division, a central bureau of records of farmers' business organizations was set up and the first complete report of this bureau was issued in 1934.² Prior to this, the Dominion Department of Labour, with the assistance of some of the provinces, had obtained certain information from co-operatives for the purpose of compiling an annual directory. Until the Economics Branch was established there was no co-ordinating agency which could deal with the mass of economic and statistical data and study the experiences and accomplishments in particular fields.

To this end, the Branch made arrangements for a survey of all existing co-operative organizations in Canada. The information thus obtained was summarized in the first bulletin. Throughout Canada the activities of the larger organizations such as the wheat pools, livestock and fruit co-operatives had reached a high state of development and had received world wide recognition but there were hundreds of other smaller associations effectively serving local areas. These were discovered and recognized in the survey. In the introduction it was stated that this accumulation of records "would provide a research laboratory in fact-finding and analysis". This survey covered the business year 1932 and dealt with the activities of 795 farmers' business organizations. Part I treated the co-operative organizations in Canada, first on a national basis and then on a provincial basis. Part II gave a business analysis of selected groups of dairy and fruit companies in Canada.

After the publication of this report there appeared another in October, 1935,³ which summarized the business activities of farmers' organizations for the crop years 1933 and 1934. It supplemented and brought up to date the results published in the bulletin of 1934. In the foreword to the 1935 publication notice was given of the compilation of a directory and this handbook appeared in 1936. Another and more recent directory was published in May, 1945.⁴ This directory lists all co-operative associations in Canada which report to the Economics Division. The mailing address of each is given as well as the commodities purchased and marketed. Dollar volume of business of each association is indicated by a symbol which places it within a certain range. The directory is available by writing to the Division.

Interim Reports.—These have been the major published reports on co-operation. Each year, however, brief reports have appeared in *The Economic Annalist*. In the first issue of this publication (January, 1931) in a statement by the then Minister of Agriculture it was announced that "notes and informa-

¹ Canada. *Royal Commission on Co-operatives*. Report. Appendix A:76. 1945.

² Richards, A. E. *Farmers' Business Organizations in Canada*. Dominion Dept. of Agriculture. Bulletin 173—New Series. 1934.

³ Richards, A. E. *Farmers' Business Organizations in Canada*. Dominion Dept. of Agriculture. Pub. 481—Tech. Bulletin 3. 1935.

⁴ Canada. *Directory of Co-operative Associations in Canada*. Pub. 772—Farmers' Bulletin 129. 1945.

tion of a timely nature concerning the activities of farmers' organizations will be brought together and summarized". Accordingly, during 1931 twelve stories and reports of organizations appeared. The reports concerned the Maritime Egg Exchange, The P.E.I. Egg and Poultry Association, the United Grain Growers and the United Farmers' Co-operative Company. Other stories included reports on co-operative fire insurance companies in Quebec, Ontario and Manitoba.⁵

The first business analysis of farmers' co-operatives appeared in June, 1931.⁶ This study concerned the business of the Fraser Valley Milk Producers, the Alberta Co-operative Dairy Pool, the Manitoba Co-operative Dairies Ltd. and the United Dairymen's Co-operative of Montreal. These short reports were continued and the next one appeared in August, 1931.⁷ These two analyses were made from data received directly from the co-operatives.

At this time returns were being made annually from all over Canada. As the central bureau of records built up and returns became more complete it became possible to make more detailed and complete studies and in 1932 a comparison was made of the business organizations of British Columbia and Nova Scotia fruit co-operatives.⁸ Another analysis of the finances of co-operative dairy companies in British Columbia appeared in December, 1932.⁹ A similar study covering dairy companies in the three Prairie Provinces was published in April, 1933,¹⁰ and the whole was presented in September, 1933.¹¹

All these may be considered preliminary and interim reports and in the first published bulletin,¹² revised and final figures were released. Decision was made then to report annually on the status of farmers' business organizations in Canada and these appeared regularly in *The Economic Annalist* until 1942 when the report for the year 1941 was published as a separate circular.¹³ This included for the first time as complete coverage as possible of all co-operatives in Canada whether farmers' associations or not. It also included a fairly detailed statistical summary of the operations of co-operative credit societies (credit unions and caisses populaires). The Division reported first on these societies in *The Economic Annalist* for December, 1940 and February, 1941. The response to these reports was encouraging and as a result the responsibility for the collection of statistics and the publication of an annual report was assumed by the Division and has been continued since that date. Attention was also given to provincial and Dominion co-operative legislation in 1935¹⁴ and again in 1941¹⁵ when changes and amendments were noted and summarized.

Field Surveys.—In 1939, the Division embarked on special studies made by direct field work with co-operatives. One which concerned the marketing of livestock, eggs and poultry in the Maritime Provinces has been completed but

⁵ Gosselin, A. Co-operative farm fire insurance in Quebec. *Econ. Annalist* I. No. 6: 4-5, 1931. Mutual insurance companies in Ontario and Manitoba do large business. *Econ. Annalist* I. No. 7: 5-7, 1931.

⁶ Richards, A. E. Canadian dairymen sell co-operatively. *Econ. Annalist* I. No. 6: 6-8, 1931.

⁷ Richards, A. E. Volume of business in relation to value of plant and equipment in farmers' associations handling dairy products. *Econ. Annalist* I. No. 8: 6-7, 1931.

⁸ Richards, A. E. Business organizations of British Columbia and Nova Scotia fruit companies. *Econ. Annalist* II. No. 2: 14-17, 1932. Business analysis of British Columbia and Nova Scotia fruit companies. *Econ. Annalist* II. No. 3: 26-28, 1932.

⁹ Richards, A. E. Financial analysis of co-operative dairy companies in British Columbia. *Econ. Annalist* II. No. 12: 103-106, 1932.

¹⁰ Richards, A. E. Financial analysis of co-operative dairy companies in Alberta, Saskatchewan and Manitoba. *Econ. Annalist* III. No. 4: 44-46, 1933.

¹¹ Richards, A. E. Business analysis of the combined operations of twenty-five co-operative dairy companies in Canada. *Econ. Annalist* III. Nos. 7, 8 and 9. 79-82, 1933.

¹² Richards, A. E. *Farmers' Business Organizations in Canada*. Dominion Dept. of Agriculture. Bulletin 173—New Series. 1934.

¹³ O'Meara, J. E. & Lalonde, Lucienne M. *Co-operation in Canada*, 1941. Dominion Dept. of Agriculture. Pub. 740, Circular 173. 1942.

¹⁴ Richards, A. E. Acts of incorporation of co-operative associations in Canada. *Econ. Annalist* V. No. 1: 3-8. 1935.

¹⁵ O'Meara, J. E. Co-operative legislation in Canada, 1941. *Econ. Annalist* XI. No. 5: 68-74. 1941.

publication was delayed due to the outbreak of war and lack of funds and staff. It is now proposed to bring this study up to date and release the results. Another very comprehensive study was made in the same year in Saskatchewan in co-operation with the Co-operation and Markets Branch of the Provincial Department of Agriculture. *The Economic Annalist* carried two interim reports on the findings of the survey.¹⁶

In all, thirteen mimeographed reports on the findings of this survey were published and eight booklets were projected for printing and distribution. Of these booklets, three have already been completed and are available.¹⁷ In the first booklet may be found an analysis of the apparent reasons for the dissolution of 531 Saskatchewan co-operative associations during the 25 years 1914-38.

The remaining five pamphlets deal with the following subjects: Merchandising Operations and Merchandising Costs of Co-operatives in Saskatchewan, Co-operative Methods of Financing, Co-operative Management and Membership Relations, Bookkeeping and Accounting Methods for Co-operatives, Co-operative Case Studies and Current Saskatchewan Co-operative Developments in 1941-42. The completion of these reports is now in the hands of the Department of Co-operation and Co-operative Development in Saskatchewan and recent information from the Director of Research in that department indicates they will likely be published this year.

During the war little analysis was done at Ottawa but the records were maintained. The last two official reports on co-operation in Canada (1943 and 1944) were mimeographed and are available on request. Full distribution to the mailing lists was not made because of shortage of staff and pressure of other work. Since the end of the war requests for special surveys on co-operatives have been received and are being given consideration. Canadian research in co-operation has a great field yet to cover. Recently in the United States the criticism has been made that the amount of research already completed in co-operation is all out of proportion to the importance of co-operatives in the national business structure. Such a criticism certainly would not apply in Canada. Rather the criticism could be reversed and read that the importance of co-operatives in marketing and purchasing in Canada warrants a great deal more research than has been done or is contemplated. Co-operatives, like any other business, must be able to stand the usual tests applied in business analysis. Continuing analyses of this nature are useful and standard ratios can be worked out to allow co-operative leaders to assess their particular industry and compare relative efficiency of associations. New methods of financing can be rated with the old, passed on or rejected in the light of results shown in the analysis. Managerial efficiency can also be measured. To the alert and progressive co-operator a strictly impartial business analysis can be a means of discovering weaknesses and strength and the translation and application of such findings to the organizations concerned can result in better co-operative business methods.

The bureau of records at Ottawa includes reports from more than 2,000 co-operative associations which do an annual volume of business of over $\frac{1}{2}$ billion dollars. There is every reason to believe that these figures will increase. As they do, increased demands for research will be made to governments and universities. These demands will likely result in projects in which the agencies

¹⁶ Hansen, W. J. & Turner, A. H. Facts concerning the dissolution of co-operative purchasing associations in the Province of Saskatchewan, 1914-38. *Econ. Annalist* X. No. 1: 9-13. 1940.

Hansen, W. J. & Chown, W. F. Co-operative purchasing and servicing associations, Saskatchewan, 1914-38. *Econ. Annalist* X. No. 2: 25-28. 1940.

¹⁷ Turner, A. H. *Historical and Statistical Analysis of Co-operative Purchasing Associations for the Twenty-five Year Period (1914-1938)*. Sask. Dept. of Agriculture, Bulletin 95A. 1939. *The Location, the Services Rendered and the Co-operative Merchandising Position of Co-operatives in Saskatchewan in the Year 1938*. Sask. Department of Agriculture, Bulletin 95B. 1939. *The Control and Cost of Customer Credit*. Sask. Dept. of Agriculture, Bulletin 95E. 1939.

will co-operate and the results of research thus conducted will become available to governments for policy planning and framing of legislation, to the universities for teaching and reference purposes and to the co-operatives for propaganda and publicity.

WHAT HAS HAPPENED TO FRUIT TREES IN CANADA IN THE LAST 40 YEARS

B. A. CAMPBELL AND W. C. HOPPER

The 1901 census reported 21 million fruit trees in Canada and by 1941 this number had decreased to 13·8 million. This decrease in the number of fruit trees can be accounted for in several ways. Trees were planted in all sections of Canada as the country became settled because settlers had little knowledge as to adaptability of fruit trees to the climate or soil of a particular region. In a great many cases it was found that climate was too severe and winter killing resulted often enough to make the growing of certain fruits impractical. Later as commercial agriculture developed, certain limited areas of Canada, particularly parts of Ontario, Nova Scotia, British Columbia and Quebec, were found suited to growing tree fruits with the result that production expanded in these areas. In limited areas of Ontario such as the Niagara Peninsula, plantings of tender fruits increased and replaced apple trees which could be grown over a wider area of Canada. Also as commercial agriculture developed, diseases and pests became more prevalent, and specialization in other types of agriculture developed; consequently the farmer with a few trees found it impractical to care for his fruit properly with the result that small farm orchards have practically disappeared in many sections of Canada.

I. Changes in Numbers of Apple Trees in Canada, 1901-1941

In 1901 there were more than 15 million apple trees reported in Canada and by 1941 this total had declined to approximately 8·5 million trees. This represented a decline of 43·6 per cent in the 40-year period. In 1940, total production of apples was approximately 14 million bushels which was 25 per cent less than was reported in the census of 1900. The most significant change in numbers of trees has taken place in Ontario where the number declined from 9·5 million in 1901 to 2·9 million in 1940. The apple tree population in Nova Scotia in 1941 was approximately the same as was reported in 1901, while the actual production of apples from commercial apple orchards in 1940 was almost double that reported for apple trees in 1900. In British Columbia the number of trees increased from 0·4 million to 1·5 million during the 40-year period with the result that in 1940 British Columbia produced more apples than any other province in Canada. A breakdown on a provincial basis from 1901 to 1941 is shown in Table 1.

The large percentage decrease in Ontario, Prince Edward Island, New Brunswick and the Maritimes is accounted for in the main by the development of commercial orchards, the elimination of trees in general, and the specialization in

TABLE 1.—NUMBER OF APPLE TREES IN CANADA, 1901-1941

Province	1901	1911	1921	1931	1941	Change 1901-1941
		000 omitted				%
Nova Scotia.....	1,975	2,481	2,181	2,232	1,993	+ .9
New Brunswick.....	675	624	596	424	299	- 55·7
Prince Edward Island.....	202	206	163	117	68	- 66·3
Quebec.....	2,257	2,113	1,417	1,619	1,704	- 24·5
Ontario.....	9,784	9,784	5,794	4,549	2,859	- 70·0
Prairies.....	11	34	13	33	109	-
British Columbia.....	392	1,976	2,326	1,847	1,462	+273·9
Total Canada.....	15,054	16,217	12,462	10,821	8,494	- 43·6

other types of agriculture. In the early years of this century most farms had a small orchard, but as diseases and pests became more prevalent and as specialization in other types of farm enterprises developed it was not profitable or convenient for farmers to spray and care for a few apple trees. Sooner or later these were cut down and used for firewood. Frost damage also accounted for some of the loss.

TABLE 2.—PRODUCTION OF APPLES IN CANADA, 1900-1940

Province	1900	1910	1920	1930	1940	Change 1900-1940
			(000 bus.)			%
Nova Scotia.....	2,065	1,667	4,322	4,971	3,916	+ 89.6
New Brunswick.....	503	273	393	336	185	- 63.2
Prince Edward Island.....	159	160	175	108	4	- 97.5
Quebec.....	2,025	1,482	1,002	981	1,102	- 45.6
Ontario.....	13,631	6,459	9,772	4,542	3,458	- 74.6
Prairies.....	2	2	1	3	8	+300.0
British Columbia.....	240	575	1,820	4,600	5,164	—
Total Canada.....	18,626	10,619	17,486	15,550	13,833*	- 25.5

*Does not include production on farms with less than 50 trees.

Ontario.—An analysis of the number of apple trees by counties and regions of Ontario shows that the change was not confined to any one region but was wide-spread over the whole province. Peel County was the only county in Ontario that showed an upward trend, and the number of apple trees increased from 122,600 in 1901 to 189,000 in 1941.

A breakdown by regions in Ontario for 1901 and 1941 is shown in Table 3. Farms in Eastern Ontario showed the largest decline since 1900.

TABLE 3. NUMBER OF APPLE TREES BY REGIONS IN ONTARIO, 1901-1941

	1901	1941	Change 1901-1941
	(000 omitted)		%
Southern Ontario.....	3,324.2	1,037.3	- 68.8
Western Ontario.....	2,809.1	837.1	- 70.2
Central Ontario.....	2,293.5	739.9	- 67.3
Eastern Ontario.....	1,061.8	209.8	- 80.2
Northern Ontario.....	51.7	27.6	- 47.6
Total Ontario.....	9,540.0	2,850.7	- 70.2

Quebec.—The decline in the number of apple trees was not as marked in Quebec as it was in Ontario and two regions of the province showed significant increases in the 40-year period.

TABLE 4. NUMBER OF APPLE TREES BY REGIONS IN QUEBEC, 1901-1941

	1901	1941	Change 1901-1941
	(000 omitted)		%
Gaspé Peninsula.....	75.3	120.2	+ 59.6
Eastern Townships.....	554.2	268.7	- 52.4
St. Lawrence Valley—south.....	1,248.7	975.2	- 21.9
North Western Quebec.....	307.0	206.2	- 32.8
Northern Quebec.....	72.8	139.2	+ 91.2
Total Quebec.....	2,258.0	1,704.5	- 24.5

Nova Scotia.—In Nova Scotia in 1941 the three counties of Kings, Hants and Annapolis accounted for 91 per cent of all the apple trees in Nova Scotia as compared to 63·0 per cent in 1901. During the 40-year period the number of trees in Kings, Hants and Annapolis increased from 1·2 million to 1·8 million while those in all other counties of Nova Scotia decreased from 730,000 to 112,000.

British Columbia.—British Columbia in 1900 was in the process of being settled and when it was found that land in the Okanagan Valley was suitable for commercial apple production the number of trees increased sharply. The 1901 census reported 390,000 apple trees of which only 107,000 were located in Yale and Caribou districts—the settled farming area outside the lower mainland. By 1941 the number of apple trees in British Columbia had increased to 1·5 million of which 1·0 million were located in the Okanagan Valley. During the same period the number of apple trees in all other areas of British Columbia increased from 283,000 in 1901 to 453,000 in 1941. The tree population in 1941 was 31 per cent less than the 2·3 million apple trees reported in 1921. This decrease was caused by the elimination of poor varieties, and the abandonment of large numbers of trees in areas which were not profitable for apple production either on account of high cost of irrigation or for other economic reasons.

Trees in British Columbia are confined chiefly to commercial orchards. In 1940 the average production per tree in this province was 4·0 bushels as compared with 2·1 bushels for all of Canada.

During the 40-year period from 1901 to 1941 British Columbia has attained a place as a fruit producing province due to its favourable climate and soil and the feasibility of irrigation in the most important fruit growing area of that province.

II. Changes in Numbers of Fruit Trees, Other Than Apples, in Canada, 1901-1941.

During the years, 1901 to 1941, the changes in the number of fruit trees, other than apple, have not been as great as those shown for apples. An analysis of the number of fruit trees, other than apples, by census years from 1901 to 1941 is shown in Tables 5-10.

TABLE 5. NUMBER OF FRUIT TREES, OTHER THAN APPLES, 1901-1941

Kind of Fruit	1901	1911	1921	1931	1941	Change 1901-1941
		(000 omitted)				%
Peaches.....	1,301	1,896	1,196	1,038	2,310	+ 21·8
Pears.....	862	967	674	681	978	+ 1·1
Plums.....	2,416	1,712	1,252	1,002	1,067	— 37·7
Cherries.....	1,288	1,237	887	806	834	— 32·6
Apricots.....	—	—	—	—	66	—

TABLE 6. NUMBER OF PEAR TREES IN CANADA BY PROVINCES, 1901-1941

Province	1901	1911	1921	1931	1941	Change 1901-1941
		(000 omitted)				%
Maritimes.....	60·6	66·6	19·9	22·9	41·0	— 32·4
Quebec.....	11·8	7·8	2·1	2·2	2·9	— 75·4
Ontario.....	845·0	743·2	499·9	498·0	700·2	— 17·1
Prairies.....	—	·2	—	·4	6·8	—
British Columbia.....	44·7	149·4	152·0	157·9	227·0	+ 407·8
Total Canada.....	962·1	967·2	673·9	681·4	977·9	— 1·6

TABLE 7. PEAR PRODUCTION IN CANADA IN BUSHELS, 1900-1940

Province	1900	1910	1920	1930	1940
			(000 omitted)		
Ontario.....	488	424	378	421	293
British Columbia.....	25	51	129	197	263
Total Canada.....	532	504	520	643	585*

*Does not include production on farms with less than 50 fruit trees.

TABLE 8. NUMBER OF PLUM TREES IN CANADA, BY PROVINCES 1901-1941

Province	1901	1911	1921	1931	1941	Change 1901-1941
			(000 omitted)			%
Nova Scotia.....	172	91	22	35	36	- 79.1
Quebec.....	364	262	171	138	133	- 63.5
Ontario.....	1,686	1,130	834	622	556	- 67.0
British Columbia.....	86	169	209	166	210	+144.1
Other.....	108	70	16	39	132	+ 22.2
Total Canada.....	2,416	1,712	1,252	1,002	1,067	- 55.8

TABLE 9. NUMBER OF CHERRY TREES IN CANADA BY PROVINCES, 1901-1941

Province	1901	1911	1921	1931	1941	Change 1901-1941
			(000 omitted)			%
Prince Edward Island.....	70	53	12	10	6	- 91.4
Nova Scotia.....	62	45	18	19	17	- 72.6
New Brunswick.....	35	19	5	4	7	- 80.0
Quebec.....	394	166	108	81	80	- 79.3
Ontario.....	684	835	626	528	557	- 9.2
Manitoba.....	14	12	1	4	15	+ 7.1
Saskatchewan.....	2	1	1	5	26	—
Alberta.....	—	1	—	2	1	—
British Columbia.....	27	106	117	152	115	+325.9
Total Canada.....	1,288	1,237	887	807	834	- 35.3

TABLE 10. PRODUCTION OF CHERRIES IN CANADA IN BUSHELS, 1900-1940*

Province	1900	1910	1920	1930	1940
			(000 omitted)		
Ontario.....	132	146	334	273	153
British Columbia.....	14	27	109	91	86
Other Provinces.....	191	66	52	28	5
Total Canada.....	337	239	485	392	244*

*Does not include production on farms with less than 50 fruit trees.

BOOK REVIEWS

FOWKE, Vernon C.—*Canadian Agricultural Policy—The Historical Pattern*. The University of Toronto Press, Toronto, 304 pages, 1946.

Agricultural policies are not made in a void. Such policies are determined by present needs, modified by future expectations but to a large extent are shaped by past experiences. It is because of this, that a forthright history of agricultural policy makes a positive contribution to the current thinking of policy makers.

Canadian Agricultural Policy is a timely book. The absence of a section on the period between 1930 and 1945 does not lessen its value. The book is useful not only to the policy maker but to the student and teacher.

Professor Fowke's review of past agricultural policy throws light upon present day agricultural problems. The author's interpretation of the agricultural policy of government throughout the various periods of Canadian history is based upon functional analysis.

The book is divided into two parts, the first entitled Pre-Confederation Period, and the second part Federal Agricultural Policy. The first part deals with the efforts of the French and English to establish agriculture in Canada. The author concludes that

"Considered as a whole the assistance extended by government to Upper and Lower Canadian agriculture before 1850 was trifling in amount, formal in conception, and indicates that encouragement to agriculture was no essential part of the real interests of government."

The second part reviews the division of powers between the federal and provincial governments at Confederation, the encouragement of immigration and settlement, the livestock and dairy industries, the production and marketing of wheat and, the Canadian tariff policy and the farmer.

Lack of space prevents a more thorough discussion of the book, but the following quotation should make for considerable soul-searching:

"A consideration of the functions of agriculture remains an important aid towards the understanding of governmental policy to agriculture. Canadian agriculture has provided defence, provisions, and investment opportunities. The defence, or military, role is recurrent, as in the periods 1914-18 and 1939-45, and gives agriculture a degree of political strength which tends to survive briefly into post-war years. The provisioning role is continuous but no longer makes for bargaining strength expect in mining, fishing, and lumbering regions where agriculture approaches only with difficulty.

"As for providing investment opportunities, the frontier role, Canadian agriculture excelled in this capacity from 1900 to 1930. . . . The vital frontier of Canadian investment in fixed equipment since 1930 has been in the Pre-Cambrian Shield instead of in the agricultural West, in newsprint and minerals instead of in wheat. The facts call for a new Canadian philosophy not only of agricultural functions and agricultural policy, but also of the relationship between the federal and provincial governments in regard to agriculture."

HARE, H. R.—*Farm Business Management*. The Ryerson Press, Toronto, 1946.

H. R. Hare, Agricultural Adviser of the National Employment Service of Canada, formerly a member of the Economics Division, Department of Agriculture and also a contributor to this publication, has written a long needed textbook on Canadian Farm Business Management. The author in his preface says that "the material contained in the volume has been assembled, organized and prepared with the hope of providing a Canadian text in Farm Business Management for the use of students in agriculture". The author has made a serious attempt to outline and illustrate the farm business management principles which scientific research has revealed to be fundamental to worthwhile net returns from farm operation.

The book is divided into 20 chapters and covers such phases of farming as the Nature of Farm Business in Canada, Farm Capital—Land—Farm Labour—Farm Equipment—Factors Affecting the Net Returns of Farm Business—Recording the Farm Business—Selecting and Acquiring a Farm.

The book should be off the press by September. This note will be followed by a more detailed review in the next issue of the Economic Annalist.

SHEPHERD, Geoffrey S.—*Marketing Farm Products*. The Iowa State College Press, Ames, Iowa. 445 pages, 1946.

The marketing of farm products has become a very complex task. Technological advances in the field of marketing, while benefitting the consumers and the food producers, also create new economic problems. Dr. Shepherd in his new book, just off the press, deals with these problems. As he himself states:

"The purpose of this book is to present and analyze the new marketing developments in a systematic way, to show what they mean in economic terms, and to show how producers and consumers can make the best use of the opportunities which these new developments create".

Professor Shepherd has for many years been teaching, doing research and writing in the field of marketing. Much of this experience has gone into this new textbook. The marketing student will find it a good guide in his thinking on the subject.

The book is divided into three parts and an appendix. Part I deals with the physical production and distribution plant. It includes discussions on geographical specialization, demand and supply, the two parts of the price making process and the marketing system that brings supply and demand together.

Part II considers the individual farmer's problem of producing the goods that are in demand, and selling them to advantage in the varying price environments that confront farmers to-day—the problems of meeting fluctuations in market price.

Part III deals with marketing costs—what they are, and how they can be reduced. Most of these cost problems involve group action. This section is likely to be of greatest interest. Professor Shepherd makes an important contribution in giving over so much space to a discussion of the current topic of reducing marketing costs.

Although written from United States viewpoint, it is not difficult to apply much of the analysis to the Canadian scene. Some day, a Canadian or American economist may get around to writing a book dealing with both United States and Canadian farm produce markets.

HAMILTON, W. M.—*The Dairy Industry in New Zealand*. Council of Scientific and Industrial Research, New Zealand, Bulletin 89, 176 pages, 1944.

The title of this bulletin is somewhat deceptive in that it is of interest to more than just students of New Zealand agriculture. As a considerable portion of the book is devoted to an appraisal of New Zealand's position in world agriculture, relationships with the economies of Great Britain, the United States, Canada and Denmark are dealt with in some detail. Dr. Hamilton's object is to give "a factual background against which developments may be viewed in perspective", and aims, "to raise problems rather than to solve them".

Of great import is the raising of such questions as the validity and usefulness of, "the persistence among (dairy) breeders and farmers (and instructors) of the English judging tradition based on external appearance and conformation, and the continued emphasis on the dam as a basis of selection. . . . New Zealand has lagged thirty years behind Denmark and Sweden in its approach to problems of animal improvement". When 1937 figures from the statistical Year-book of the League of Nations are quoted showing New Zealand as ranking fourth in average number of gallons per dairy cow and third in average pounds butterfat, much food for thought is provided by Canada's ranking as eighth under both measurements.

Dr. Hamilton constantly stresses that the New Zealand dairy industry must prepare itself for declining prices and therefore must seek new methods of lowering production costs and warns against sacrificing efficiency to a temporary mirage of prosperity through subsidization.

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The ECONOMIC ANNALIST

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THE ECONOMIC SITUATION

The first post World War II year has passed, and Canadian agriculture maintains, to a large extent, its wartime production levels. Farm prices continue their upward trend. Between September 1945 and July 1946 there was a six per cent increase in prices received by farmers for their products.

As conditions permit, the Canadian economy as a whole is being freed from the controls imposed during the war years.¹ In agriculture specifically, by the end of September 1946, the Dominion Department of Agriculture discontinued the payment of subsidies on milk for fluid use and for evaporated milk, on beans, canning crops, berries for jam, and on the transportation of fertilizer. In turn, the Wartime Prices and Trade Board allowed upward adjustments in the price ceiling for the commodities listed.

Business Activity.—Productive operations were slightly lower in August than in the preceding month, the index of physical volume of business showing a recession of 1.2 per cent. The August index is the lowest recorded for the first eight months of this year.

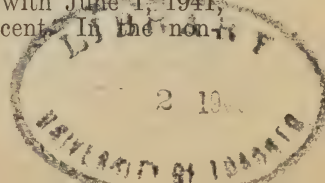
Retail sales for fourteen kinds of business showed a cumulative gain for the first eight months of this year over the same period of 1945. Based on the composite index published by the Dominion Bureau of Statistics, the increase was 15 per cent.

Employment.—Industrial employment generally showed an important recession at the beginning of August which was caused, in the main, by the existence of wide-spread industrial disputes. Since 1920, the movement at mid-summer has usually, though not invariably, been upward; had it not been for the losses in employment directly resulting from labour-management disputes, the trend at the date under review would have been decidedly favourable. The curtailment in operations took place very largely in manufacturing; also, chiefly as a result of strikes, there was a falling-off in mining, while employment in logging and trade showed seasonal declines. On the other hand, considerable improvement was reported in transportation, communications, services and construction and maintenance.

Based on the 1926 average as 100, the index of employment at August 1 was 172.6, as compared with 173.6 at July 1, 1946, 175.0 at August 1, 1945 and 184.3 at August 1, 1944; in 1943, the August 1 figure was 185.9, the all-time maximum for that date in the years since 1920. In 1939, the index at the first of August had stood at 117.5. Since a general recession at midsummer is contra-seasonal, the index after adjustment for seasonal variation, also showed a decline, falling from 170.3 at July 1, to 167.9 at the date under review.

It is interesting to note that, despite the falling-off in the production of munitions since the cessation of hostilities, and the serious losses due to the many important strikes recently in effect, employment in manufacturing showed an increase of 9½ per cent at August 1, 1946, as compared with June 1, 1941, since when the reported payrolls have risen by 37.3 per cent. In the month of

¹For more details see February, May and August, 1946 issues.



manufacturing industries taken as a unit, the advance in employment since the commencement of the record of payrolls amounted at August 1 to 17.6 per cent, and that in the aggregate weekly salaries and wages, to 50.3 per cent. The higher proportions of increase in the non-manufacturing classes generally, which reflect a situation differing from that existing during the war, result partly from curtailment in the production of munitions, and more recently, from losses in manufacturing due to industrial disputes, as well as to a considerable revival of activity in the non-manufacturing industries.

In the last 12 months, there has been a decline of 9.8 per cent in employment and of 10.2 per cent in the payrolls disbursed by leading manufacturers, while the reported employed in the various non-manufacturing industries has risen by 11.4 per cent, accompanied by a gain of 16 per cent in the salaries and wages. The disparity is, of course, due in large part to the strikes.

Prices.—The general wholesale price index of all commodities during August and September dropped slightly from the high of 109.5 reported in July, 1946. The index number of wholesale prices of Canadian farm products, both field and animal, showed a similar decline.

The wholesale index of Canadian farm products prices declined from 111.0 to 110.1 between the weeks of August 23 and September 27. Seasonal factors were mainly responsible for a drop of 1.2 points to 98.8 in the field products group. Sharp losses were registered for potatoes and onions which outweighed strength in rye and hay. Animal products moved down 0.4 points to 129.1 due to declines in livestock which overbalanced firmer egg prices.

The composite Dominion index of prices paid by farmers for commodities and services, including living costs, rose 3 points to 141.6 between April and August, 1946, the Dominion Bureau of Statistics reports. This was an increase of 5.6 per cent over August, 1945. The eastern index at 142.4 and the western index at 140.5 showed April-August advances of 3.2 and 2.9 points respectively. A greater variation between east and west was apparent in increases over August, 1945 levels—4.9 points in the east and 6.1 points in the west.

Cost-of-Living.—Seasonal declines in prices of fresh vegetables during August was sufficient to check an advance dating from February, 1946, in the cost-of-living index compiled by the Dominion Bureau of Statistics. The index declined from 125.6 on August 1, to 125.5 on September 3, 1946. The food group fell from 144.7 to 143.2, due almost entirely to lower quotations for vegetables. Fruits were also slightly lower but eggs recorded moderate increases. The clothing index moved up from 127.6 to 129.6 for September, while home-furnishings advanced from 127.0 to 128.4. The miscellaneous items series changed from 113.8 to 113.9; fuel and light remained unchanged at 107.2, and rentals at 112.6.

Subsidy Policy.—The Dominion Government has reiterated its stand with respect to the removal of subsidy payments at the earliest opportunity. To this end the subsidies on fluid milk and concentrated milk were removed as of September 30th, and consumer price increases, at least equal to the subsidies, have been allowed. Subsidies of 10 cents per pound butterfat are payable on butterfat used in the manufacture of creamery butter until April 30, 1947, while subsidies on milk used in the manufacture of cheese are payable at the rate of 30 cents a hundred pounds until April 30, 1947.

Agricultural Production.—The wheat crop for all Canada in 1946 is placed at 440,567,000 bushels in the first estimate of grain production made by the Dominion Bureau of Statistics. This estimate exceeds the 1945 crop by approximately 135,000,000 bushels, and is the highest since the record production of 1942, with the estimated average yield of 17 bushels per acre running one bushel higher than the long-time average. The current crop is being harvested from an estimated 25,900,000 seeded acres, the highest wheat acreage since

1940 and about 2.5 million acres greater than the acreage seeded to wheat in 1945.

The anticipated wheat output in the Prairie Provinces this year is 420,000,000 bushels as compared with 282,000,000 bushels in 1945. This year's crop includes 9,900,000 bushels of durum wheat. The anticipated average yield of all wheat in the Prairie Provinces this year is 16.7 bushels per seeded acre, with the Manitoba average standing at 21.9, Saskatchewan at 14.6 and Alberta at 18.9 bushels per acre.

Ontario, with the only substantial wheat acreage in Canada outside of the Prairie Provinces, produced this year a total of 16,934,000 bushels of wheat.

The oat crop is estimated at 411,459,000 bushels, about 30,000,000 bushels higher than the 1945 crop. The increase is largely accounted for in the provinces of Ontario and Alberta.

The estimated production of barley is up from last year's figure by nearly 7,000,000 bushels. This year's anticipated production of 164,206,000 bushels is well below that in the years 1942, 1943, and 1944, but exceeds the production in any other year to date.

The fall and spring rye production is estimated at 7,588,000 bushels as compared with 5,888,000 bushels a year ago. The increase is attributable to moderately higher acreages and yields this year as compared with last year. The flax crop is placed at 8,742,000 bushels, an increase of nearly a million bushels over last year's figure of 7,593,000 bushels. Although the acreage seeded to flax is slightly lower this year the average yield is up 1.5 bushels per acre from 1945.

The 1946 potato crop, estimated at 47 million hundredweight, is substantially above the 36 million hundredweight crop of a year ago. With the exception of 1944 when 49 million hundredweight of potatoes were produced, the present crop is the largest since 1934. While acreages this year were above those of 1945, the greatest contributing factor to the larger production appears to be in the average yield of 90 hundredweight per acre, 5 hundredweight above the long-time average. Quebec and Manitoba are the only provinces in which the 1946 potato acreages declined below those of a year ago. New Brunswick had the highest yield of potatoes per acre—150 hundredweight.

Increased acreages and above-average yields have produced a commercial sugar beet crop for 1946, totalling 702,000 tons, 83,000 tons above the 1945 yield.

Shelled corn production is estimated at 10,147,000 bushels as compared with 10,365,000 bushels in 1945. Production of dry peas in Canada this year amounted to 2,322,000 bushels as compared with 1,363,000 bushels a year ago.

Estimates by the Dominion Bureau of Statistics of the numbers of principal kinds of livestock on farms in Canada at June 1, 1946, showed an appreciable reduction from those of the previous year. The decline is in all classes of livestock. The reduction in hog numbers has been continuing since December 1943. The number of sows expected to farrow declined very little. These figures are an indication that the downward trend in hog production is beginning to level off. Cattle numbers, after reaching an all-time peak at June 1, 1945, show a reduction at June 1, 1946, of 3.5 per cent. Most of this has occurred in the Prairie Provinces. Milk cow numbers, estimated at 3,913,000 at June 1, 1946, are 84,300 below those of a year ago. Numbers of horses on farms which have been declining for some years, were reduced in 1946 by 7.3 per cent. The principal decreases have occurred in the Prairie Provinces. Numbers of sheep on farms are below those of a year ago, with an over-all reduction for Canada of 6.7 per cent. The only province showing a gain over last year in sheep numbers is Saskatchewan where a very slight increase is recorded.

Inspected slaughterings of cattle at the close of the third quarter of 1946 totalled 1.1 million head, a decrease of five per cent as compared with the corresponding periods in 1945. Hog slaughterings at inspected plants during the same first nine months of 1946 amounted to 3 million hogs, a reduction of 28 per cent as compared with the same period in 1945.

Exports.—Continuing the expansion recorded in July, Canada's merchandise export trade in August rose sharply in value to \$242,685,000—the highest monthly total since the capitulation of Japan in August last year, according to trade totals released by the Dominion Bureau of Statistics. There was, however, a reduction of \$52,364,000 from last year's August total. Merchandise exported during the first eight months of the current year amounted to \$1,494,165,000 as compared with the wartime total of \$2,296,156,000 in the similar period of 1945.

Exports to the United Kingdom for the eight months of this year stood at \$378,339,000 as compared with \$729,331,000 last year. To the United States—Canada's chief market—total exports for the eight months ended August were \$546,161,000 compared with \$833,540,000 a year ago.

Long-Term Contracts.—Long-term contracts for food products between Canada and the United Kingdom assure farmers of a stable export market for the next two years. Canada's new egg contract with the United Kingdom offers an assured market a higher price for every surplus Canadian egg laid from February 1, 1947, to January 31, 1949.

Under the contract the Special Products Board will deliver to the United Kingdom Ministry of Food a minimum of 7,500 long tons of sugar dried egg powder and 1,750,000 cases of shell eggs, of which only 600,000 cases are storage eggs, in each of the twelve-month periods, February 1, 1947, to January 31, 1948, and February 1, 1948, to January 31, 1949.

The quantity of eggs required to fill each of the twelve-month periods of this two-year contract is the same as required by the current 1946 contract, but the price obtained for this latest contract permits an increase of one cent per dozen over the 1946 price to the producer in the spring buying periods, February 1st to August 31st and an increase of two cents per dozen in the fall buying periods, September 1st to January 31st.

The Special Products Board will buy eggs of the Canadian Government Grades A Large, A Medium and A Pullet, for its 1947 shipments. The Board will limit its purchase of storage eggs to Grades A Large and A Medium, but Grades A, B, and C will be accepted for the manufacture of the sugar dried egg powder to be used by British bakers.

The beef agreement provides for the purchase from the Meat Board by the United Kingdom Ministry of Food of a minimum of 120 million pounds of Canadian beef during the calendar year 1947.

Out of the 1946 crop, fresh apples, canned and evaporated apples, fruit pulp, and dried beans and peas, are to be shipped to the United Kingdom. The provinces of Nova Scotia, British Columbia and Ontario are to supply 300,000 barrels, 2,252,000 boxes and 8,000 barrels of fresh apples respectively. The quantities of dried beans and peas total 374,000 bushels and 560,000 bushels.

Farm Wages.—Average wage rates paid to farm help in Canada are higher than a year ago according to the Dominion Bureau of Statistics survey of August 15, 1946. In the case of day help the increases are general in all provinces except Nova Scotia and are most pronounced in the western provinces. In the case of month help, increases occurred in the majority of provinces with decreases in wage rates with board provided, occurring only in Nova Scotia and New Brunswick, and without board in New Brunswick and Alberta.

THE COPENHAGEN CONFERENCE OF THE FOOD AND AGRICULTURE ORGANIZATION

J. F. BOOTH¹

Major interest at the second conference of the Food and Agriculture Organization held at Copenhagen, Denmark, September 2-13 centred in the proposals for a World Food Board submitted by the Organization's Director-General, Sir John Boyd Orr. The interest in the proposals was so great it appeared for a time that other matters of major concern might not receive the attention they deserved.

The discussion and the decision reached indicate that there was general agreement on the need for international machinery of some sort to deal with a long range world food program. This agreement is reflected in the following recommendation adopted by the conference:

Having examined the Director-General's proposals for a World Food Board in the light of the discussion in the Plenary Meetings, and accepting the general objectives of the Proposals, namely:

- (a) developing and organizing production, distribution and utilization of the basic foods to provide diets on a health standard for the peoples of all countries:
- (b) stabilizing agricultural prices at levels fair to producer and consumers alike,

it is agreed that international machinery is necessary to achieve these objectives and it is recommended that a Preparatory Commission be established to carry the proposals further.

World Food Board Proposals.—The plan submitted by the Director-General under the title of *Proposals for a World Food Board* would involve the setting up of an agency to (1) "stabilize prices of agricultural commodities on world markets, including provision of the necessary funds for stabilizing operations; (2) establish a world food reserve adequate for any emergency that might arise through failure of crops in any part of the world; (3) provide funds for financing the disposal of surplus agricultural products on special terms to countries where the need for them is most urgent; (4) co-operate with organizations concerned with international credits for industrial and agricultural development, and with trade and commodity policy, in order that their common ends might be more quickly and effectively achieved"².

It was recognized by the Conference that this plan involved far reaching considerations and that it would require much study by experts and by governments before commitments either for or against could be reached. There had not been time for such action prior to the Conference. Nor could the Conference itself give the matter the study it required. Moreover it was apparent that while there was a large measure of agreement on general objectives, there might be alternative ways of attaining those objectives. The Conference felt that there should be opportunity for the presentation and consideration of such alternatives. It therefore provided that the terms of reference of the Preparatory Commission appointed at the Conference should cover the following matters:

"The Director-General's proposals and any alternative proposals which may be submitted to it and to prepare concrete recommendations and propositions for international action for achieving the objectives as set out in paragraph 1."

¹ Ed. Note: Dr. Booth attended the Conference as a member of the Canadian Delegation.

² *Proposals for a World Food Board*. Food and Agriculture Organization. Washington, D.C., July, 1946.

Canada's position with respect to Sir John's proposals is summed up in the words of the Honourable J. G. Gardiner, Minister of Agriculture for Canada. Mr. Gardiner speaking in Plenary session at Copenhagen said:

"I need hardly say that we in Canada intend to support the principle which has been suggested to this Conference and to make some suggestions as to the way in which we believe effect might successfully be given to the proposal . . .

We in Canada agree that trade should not be promoted as if it were an end in itself, nor should food be treated as an ordinary trade commodity. Food is an essential to life, and the provision of food, including the stabilization of returns for those who produce it, should not be dependent on the success or failure of measures promoted solely in the interests of trade. Trade should be considered as a means of bringing sufficient food and other necessities for a full life within the reach of the people. We believe that the welfare of the people should be the object of any action taken. We recognize, however, that the establishment and operation of a World Food Board or any other similar machinery involve far reaching considerations. We recognize also that the functions and jurisdiction of FAO are limited by its Constitution and that other international organizations will be concerned and will have an important part to play in any action taken. But upon FAO must rest the primary responsibility for initiating and developing the type of machinery, organization and method under which it will operate if its objects are to be attained."

The Conference decided that sixteen FAO member nations, including Canada, should constitute the Preparatory Commission. Three non-member nations, U.S.S.R., Argentine and Siam will be asked to join the Commission. Representatives of various international organizations will also be invited to Commission meetings. FAO member governments not represented on the Commission may send observers.¹ Governments and international commodity organizations are invited to submit memoranda to the Commission.

The Preparatory Commission will report to the Director-General of FAO. The report is then to go to member governments, to the international agencies concerned, and to the Executive Committee of FAO. After this it will be considered by an FAO conference and, finally, will be passed on with recommendations to the United Nations.

Emergency Food Problems.—While the Committee dealing with the long range problems represented in the proposals outlined above was at work, a second Committee concerned itself with the food shortage now evident in many countries. Noting that the world food situation had improved somewhat since the emergency meeting held under FAO auspices at Washington in May last, it was brought out that there was still a gap of eight million tons of bread grains between the needs of deficit countries and the supplies likely to be available for export. The Conference, acting on this Committee's recommendations urged that the special measures agreed upon at the Washington meeting for control and economies in the use of basic foods, be continued.

The Conference at Work.—In conducting its work the Conference divided into three Commissions comprising ten Committees. The Committees of Commission A dealt with technical questions relating to agriculture, nutrition, forestry, fisheries, economics and statistics, and FAO missions. Commission B Committees were concerned with FAO internal matters such as constitution, organization, administration, and finance. The Committees of Commission C were those dealing with world food policy to which reference has already been made.

¹The Preparatory Commission began its study of the World Food Board and alternative proposals in Washington, D.C., October 28, 1946.

The Agricultural Committee outlined for the guidance of FAO the measures that may be taken to improve production in under-developed countries and to reorganize the agriculture of devastated countries. The place of research and technological developments in such a program was stressed.

The fisheries committee dealt with the urgent need for rehabilitation of the fishing industry, but recognizing that surpluses may again plague the industry, emphasized that fish and other marine products should be brought within the ambit of a World Food Board if and when such a body is created.

The Economic Committee outlined the basic information that will be needed for the successful prosecution of the work of FAO. The provision of adequate statistics, including a world census of agriculture, was considered to be imperative. The need for (1) continued work on the World Food Survey and extension of this to include fibres and other non-food agricultural products, (2) periodic reviews of the world's need for agricultural credit, (3) expansion of agriculture in underdeveloped areas, (4) industrial development in rural areas, was also dealt with.

The report of a special mission which, during the past few months, has been studying the agriculture and economic problems of Greece was brought before the conference. This was the first of such efforts launched by FAO in a program designed to assist underdeveloped or devastated countries to increase food supplies and improve the welfare of their peoples.

Drawing attention to the present shortage of forestry products the Forestry Committee outlined a comprehensive program designed to improve the situation. As with fish, however, the Forestry Committee also refers to the possibility of surpluses recurring in the future and draws attention to the fact that forest products should come within the scope of the proposed World Food Board.

The Nutrition Committee recommended that FAO arrange for consultation of experts to develop sound and comparable figures on food composition. A combined FAO-World Health Organization Committee was requested. FAO was asked to begin collection of data on the best use of plant products for human consumption; also on the most economical and satisfactory balance in production between meat and milk on the one hand, and poultry and eggs on the other.

Representation at Conference.—A total of 33 member countries, including Ireland, Italy, Portugal, Switzerland and Hungary, which were admitted to FAO at this Conference, were represented by voting delegates at the Copenhagen meetings. Eight other member countries were represented by observers. Seven non-member countries and ten intergovernmental organizations sent observers.

Arrangements for Conference.—Any report of the Copenhagen Conference would be incomplete without reference to the arrangements made by the Danish FAO Committee for the holding of the Conference and for the education and entertainment of delegates. The Rigsdagen, or Parliament Buildings, was turned over to the Conference. King Christian X formally opened the Conference and later entertained for the delegates. The Government, the Prime Minister and the city of Copenhagen also entertained. Numerous tours of farming areas and visits to co-operative associations and to educational and industrial establishments were arranged. No detail that would contribute to the efficiency of the Conference or to the enjoyment of those attending, was overlooked. These things, together with many unofficial evidences of kindness and consideration did much to contribute to the harmony and ultimate success of the Conference.

AGRICULTURE AND WORLD TRADE NEGOTIATIONS. II¹

L. LORINEZ

Proposals for Expanding World Trade.—In preparation for the International Conference on Trade and Employment, a technical staff within the government of the United States developed a program in November, 1945, for expansion of world trade and employment. These "Proposals" were subsequently transmitted to the governments of the fourteen most important trading nations.

In order to understand what impelled the United States government to initiate a drive for world trade reform, it is necessary to consider the nature of difficulties that today impede the flow of international goods exchanges. These have been listed by the authors of the "Proposals" as follows:

1. Restrictions imposed by governments;
2. Restrictions imposed by private combines and cartels;
3. Fear of disorder in the markets for certain primary commodities;
4. Irregularity, and the fear of irregularity, in production and employment.

Restrictions imposed by governments will be analysed on the following pages in some detail. Practices adopted by private combines and cartels are subject to government regulation; thus national policy is the actual consideration in connection with both items 1 and 2. Items 3 and 4 have been discussed in the first article.

Origin of Trade Barriers.—Transition from a preponderantly agricultural to industrial economy during the last century largely depended for success on liberal world trade policies. As long as only a few nations possessed extensive industrial facilities, they found ready and willing markets for their products throughout the world. As industrial plant grew, more and more people took up employment in the workshops. The factory worker achieved a higher standard of living than he had been able to eke out previously from tiny subsistence farms in Western Europe, where land had become scarce as the population increased.

On these greener pastures, the fugitives from perennial hunger made ample use of newly won prosperity. A large proportion of their regular earnings was used to buy food. Most of this had to come from countries with wide open spaces, where an extensive type of farming was still possible. Such countries were scattered all over the globe. They had practically no workshops, and were anxious to supply industrial nations with pastoral and agricultural products in exchange for manufactures. These two types of economies organically complemented each other, and everything was done to facilitate the natural flow of goods. Solid foundations of mutual advantage existed, conducive to a liberal trade policy, known as "free trade".

In due course, wage earners in industrial settlements found that their changed conditions of life called for a new dietary pattern. This took some cognizance of changes required by their sedentary mode of life. Greater concentration on protein foods featured the new diet which had favourable effects on demand for livestock products.

The initial spurt in population engendered by the new prosperity in industrial countries began to lose momentum after the turn of the century. Just before the outbreak of the first world war, Western European nations had ceased to increase materially; population had been adjusted to resources created by technological progress. This restoration of equilibrium passed unnoticed in overseas countries, which had become the principal source of world food supplies. Carried away by momentum, they continued to turn out more and more wheat, meat, dairy products and other farm commodities after the first world war. At the same time, they began to apply modern technology to farming. Furthermore, since industrialization was such a success in Western Europe, they also felt tempted by its possibilities.

It was soon found that the chances for late arrivals were greatly different from those of the original industrial pioneers. The latter had enjoyed monopoly; the former were faced with strong competition. As a result of the ensuing

¹ For Part I, see *Economic Annalist*, August 1946, page 51.

contest, industrial pioneer nations were in due course overtaken by some of their competitors who had ample local raw material resources at their disposal. The pioneers countered by using political influence to secure raw materials and to obtain reserved markets for their products despite effective competition. Every new restriction imposed, or exclusive privilege granted, was soon followed by new restrictions or bilateral arrangements¹ on the part of affected governments. As a consequence, an infinite variety of discriminatory practices and restricted trade pacts evolved, which made private transactions between exporter and importer extremely difficult.

By 1936, world trade had become largely a maze of complicated barter transactions. Wartime stringencies after 1940 eliminated this intricate system in many countries; complete government monopolies of foreign trade replaced them with regard to the most important commodities. In this system, private export-import trade had been almost completely suspended.

Classification of Trade Systems.—The following synoptical table is an attempt at classifying in a summary manner the various foreign trade devices applied during the interwar and immediate postwar period. The forthcoming international trade conference is expected to condemn some of these practices, and will designate the ones that may be used in future, carefully defining rules of application.

The Principal Trading Systems.—Space does not permit dealing in detail with the many systems outlined in the following synopsis. It is, nevertheless, possible to retrace, in passing, the progress of protectionism; to discuss briefly the most important systems that are likely to survive the postwar transition period; and finally to illustrate with an actual extreme case the difficulties of carrying on foreign trade under complicated restrictive systems.

LIBERALISM

Before the first world war, world trade was largely carried on under the liberal system of free trade. However, protective tariffs were introduced during the interwar period in Europe, North America and elsewhere. As the world depression of the thirties progressed, a variety of protectionist systems was gradually introduced.

In the beginning, these were largely multilateral. The object in view was to protect domestic producers against foreign competition from any quarters. Protective import duties were the tool of this policy, and they hit all trade partners equally.

PREFERENTIAL SYSTEM

High import duties and other conditions combined to reduce the volume of international goods exchanges during the great interwar depression period. To bolster their dwindling export trade, some nations then used political influence to obtain tariff concessions; that is, a lowering of import duties on their products. Tariff concessions of this kind were reserved for one or a few selected nations, whereas higher duties were applied to imports from other countries. The British Imperial Preference, the preferential treatment accorded to Cuba, the Philippines or Puerto Rico by the United States, and the maze of Danubian preferential agreements are outstanding examples. Canada also granted important tariff privileges to the United States, France and certain Dominions, which went beyond the privileges contained in the Empire Preference.

MOST-FAVOURLED-NATION SYSTEM

Nations placed at a disadvantage by the existence of preferential treatment granted to others soon reacted by insisting upon the inclusion of a "most-favoured-nation" clause in their trade agreements. Political influence, the granting of loans, and other means were used to obtain this valuable clause. A

¹A "bilateral" arrangement is a contract between two nations which ensures mutual privileges that are not open to other countries.

For the purposes of the present article the term "polylateral" means arrangements among several countries, involving privileges not open to other nations.

"Multilateral" agreements cover all countries having adhered to a general system of "most favoured nation" treatment. (See table.)

TABLE 1.—SYNOPSIS OF FOREIGN TRADE SYSTEMS

I. LIBERAL SYSTEM	II. PROTECTIONIST SYSTEMS		
<p><i>Criterion.</i> Domestic producers or selected nations enjoy little or no protection against competition by other nations. Domestic living standards sheltered by moderate import duties, with due consideration of "comparative costs".¹ No import restrictions exist as to country of origin, total value, or volume of trade. (Free trade.)</p> <p><i>Agencies.</i> Export-import concerns.</p> <p><i>Mechanism.</i> Individual bi-lateral agreements between private concerns. Financial consumption through drafts, letters of credit and banks.</p> <p><i>Control.</i> Only by national Commodity Exchanges to ensure honest execution of voluntary agreements between contracting parties.</p>	<p><i>Criterion.</i> Existence of definite mechanisms favouring domestic producers or producers of certain countries. Prohibitive import duties, or import restrictions exist to reduce total value or volume of imports from all nations or only with certain countries.</p>		<p>B. Bilateral or Polyilateral</p>
	A. Multilateral		
	1. "Most-Favoured-Nation" System	2. International Commodity Agreements	
	<p><i>Criterion.</i> Mechanisms exist to favour domestic producers without regard to "comparative costs of production".¹ These impose equal disadvantages upon all foreign trade partners. Any alleviation in burdens granted any trade partner automatically applies to all foreign countries participating in the "most-favoured-nation" system. (However, privileges granted under regional or imperial preferential systems are excepted.)</p> <p><i>Agencies.</i> Export-import concerns.</p> <p><i>Mechanisms.</i> Same as under the liberal system as regards transactions, often supplemented by special measures, such as:</p> <ul style="list-style-type: none">—high import duties;—total quotas for imports from all countries (no special treatment granted to any nation);—exchange manipulations (such as devaluation, premiums on all foreign exchange, etc.);—domestic production subsidies;—export subsidies, (including shipping subsidies and other disguised export subsidies). <p><i>Control.</i> Government export-import and financial authorities.</p>	<p><i>Criterion.</i> Import duties favouring domestic producers impose equal disadvantages upon all foreign trade partners. Quantitative restrictions limit the volume of exports. Share of each exporting nation in total import quota predetermined.</p> <p><i>Agencies.</i> International boards.</p> <p><i>Mechanism.</i> Quota allocations by international boards. Actual deliveries either by special government agencies or by private concerns.</p> <p><i>Control.</i> By special international agencies, supplemented by national governmental authorities</p>	See following table for details

¹ The principle of "comparative costs" tends to promote specialization by certain nations in the production of commodities that may be produced more advantageously by them than by most other nations. Thus, e.g., Argentina has a comparative advantage over most nations in producing beef, due to the existence of extensive year-round grazing facilities.

TABLE 1. PART 2.—SYNOPSIS OF FOREIGN TRADE SYSTEMS

BILATERAL OR POLYLATERAL TRADE

B. Bilateral or Polylateral					
<i>Criterion.</i> Restrictions apply to certain countries only, or to all countries with the exception of a few preferred nations, or special privileges are in existence for certain trade partners.					
1. Preferential System	2. Complete government monopoly of foreign trade.	3. Restricted Foreign Trade			
<i>Criterion.</i> Reductions in import duties or other facilities granted to certain ("preferred") nations. <i>Agencies.</i> Same as under liberal system. <i>Mechanism.</i> Same as under liberal system. <i>Control.</i> Same as under liberal system.	<i>Criterion.</i> Foreign trade in all commodities exclusively transacted by government.	<i>Criterion.</i> Foreign trade subject to government control, but not all commodities (if any) are covered by government monopolies.			
		a. SEMI-GOVERNMENTAL TRADE	b. CONTROLLED PRIVATE TRADE		
	<i>Agencies.</i> Government foreign trade organizations.	<i>Criterion.</i> Foreign trade in certain commodities reserved for government monopolies.	<i>Criterion.</i> All transactions (with the possible exception of gold, foreign exchange, war materials and certain prohibited drugs) made by private concerns, subject to certain government restrictions. According to the nature of these restrictions the following main types result:		
	<i>Mechanism.</i> Contracts with foreign governments or private concerns.	<i>Agencies.</i> Government monopolies in respect to monopolized commodities, and private concerns for other goods.	b ₁ Quantitative or qualitative control.	b ₂ Exchange control.	b ₃ Mixed control (nature, volume and exchange).
	<i>Control.</i> Government control in the monopolistic country.	<i>Mechanism.</i> Dual. Bulk purchase agreements or individual contracts between the government monopolies and trade partners abroad as regards monopolized commodities; private contracts in respect to other goods. <i>Control.</i> Government control of monopoly transactions, and two separate types of control over non-monopolized goods. <i>Types of Control:</i> a ₁ . Unrestricted trade in goods not covered by monopolies. — In this case, "free sector" transactions are covered by free private contracts. a ₂ . Controlled trade in goods not covered by monopolies. — In this case, "free sector" transactions are subject to some form of control described under "Controlled Private Trade" in this table.	Restrictions exist as to nature and/or value or volume of selected commodities.	Restrictions are imposed on the amount of foreign exchange available for purchasing abroad, or exchange premiums, or blocked accounts, or levies are in existence. Volume, value or nature not affected.	Volume, value, or nature of foreign trade, as well as exchange disposal regulated.
		<i>Agencies.</i> Private concerns and privately owned barter- or "compensatory trade"-agencies. Control exercised by government export-import authorities and exchange control organizations. <i>Mechanism.</i> Private contracts subject to licensing and terms prescribed by government agencies. <i>Control.</i> By government export-import, or foreign exchange control bodies, or by both. <i>Types of controlled private trade.</i> See following table.			

TABLE 1. PART 3.—SYNOPSIS OF FOREIGN TRADE SYSTEMS.

TYPES OF CONTROLLED PRIVATE TRADE

b ₁ Quantitative or qualitative control	b ₂ Exchange control	b ₃ Mixed control (Nature, volume, value and exchange)
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Overall control.

Overall restrictions exist, no separate control of individual transactions

b _{1a} . Preferential import quota systems.	b _{2a} . Clearing systems.	b _{2b} . Payments agreements.	b _{3a} . A definite percentage of export proceeds subject to compulsory delivery at "official" exchange rates. At the same time, quantitative and/or qualitative restrictions apply.
	The value of imports from any country must balance the value of exports to that country.	Part of export proceeds goes toward paying debts abroad, or for other purposes not directly related to the basic export-import transactions.	
	b _{2c} . Selective currency premiums		
	Premiums are paid on the exchange proceeds of exports to certain destinations, or levies are imposed on exchange needed for imports from certain countries.		

Individual control.

Each separate transaction subject to special permit or other control.

b _{1b} . Import permit system. (Selective admission of goods against payment in money. Each transaction subject to individual permit).	b _{2d} . A definite percentage of export proceeds subject to delivery at "official rates" determined in each case, but no other restrictions concerning nature, value or volume of goods covered by the contract are imposed.	b _{3b} . "Compensatory transactions." Disposal of foreign exchange proceeds individually determined for each contract; nature, value and volume of goods covered also regulated.
b _{1c} . Barter transactions. (Selective admission of goods against payment in goods. Each transaction subject to approval.) Interstate. (Between governments.) Private. (Between private concerns.)		

country having secured this clause from another nation was henceforth entitled to duty reductions granted by that nation to any other trade partner. In other words this clause secured for the beneficiary equal treatment to that accorded to "the most-favoured nation". But even under this system, "special preferences" continued to exist, which were not available to other nations.

INTERNATIONAL COMMODITY AGREEMENTS

Restrictions and the granting of exclusive privileges created especially grave problems in the trade with some staple products during the interwar period. The network of discriminatory arrangements covering wheat, sugar and wool produced by certain privileged countries, grew more and more complicated as unmarketable surpluses of these commodities continued to accumulate. Finally, trade barriers became so severe that complete collapse of markets was imminent.

Action to prevent chaos resulted in the conclusion of world-wide international sugar and wheat agreements, which allotted annual export quotas to surplus producing nations, representing a fair share of world import needs. Efforts were also made to bring wool under a similar plan, but the resulting agreement did not go beyond the stage of consultation and the creation of research bodies.

At present, the United Nations Food and Agriculture Organization is making efforts to create a World Food Board, which would facilitate disposal of surplus farm commodities through international agreement.

COMPLETE MONOPOLIES OF FOREIGN TRADE

Another departure in trying to solve foreign trade difficulties is represented by complete monopolies of foreign trade. The only such monopoly before the last war existed in the Soviet Union. This system was introduced in April, 1918, to "repulse all economic and financial intervention from abroad."¹

This system affords complete protection against the competition of other countries and against the interference of world market influences with internal markets. It enables the government to jointly regulate exports and imports without lengthy trade negotiations and changes in tariff rates, swiftly and efficiently adapting foreign trade to plans for the country's internal development. Complete monopoly made it also possible in the U.S.S.R. to operate a dual currency system, one for domestic use and the other as an accounting unit for foreign transactions.

After repeated periodical modifications, the Soviet foreign trade monopoly system became fairly definitely crystallized with the reorganization carried out in the summer of 1935.

Under this plan, the People's Commissariat of Foreign Trade² has assumed responsibility for planning, regulating, controlling and directing foreign trade. Trade delegations accredited to various countries now supervise Soviet trade with the countries in which they are located, in addition to the usual activities of commercial attachés. International transactions are handled by monopolistic export-import corporations, one each for the most important commodities or groups of commodities.

As a result of this tightly-knit organizational plan, external trade is closely adapted to the needs of domestic economy. In planning exports, the need for foreign funds with which to make purchases of supplies urgently required for internal development projects, sometimes overrides considerations of cost, price, or domestic supply and demand. Thus, Russian wheat was sold abroad at low prices at times during the early thirties, when domestic requirements were far from being filled, in order to obtain the foreign funds needed for capital goods imports. At other times, monopolistic foreign trade is influenced by political considerations.

Foreign trade monopolies were operated by a number of belligerent countries during the last war. Some of these have already reconverted to private enterprise, others have relaxed the rigidity of monopoly control.

¹See L. Krasin's *Problems of Foreign Trade*.

²After the second world war, all Commissariats were converted into ministries.

Owing to the concentration of power wielded by monopolistic organizations, private trade finds itself greatly handicapped in competitive fields. In order to enable both systems to operate on world markets without the danger of conflict, it is necessary to establish definite rules of conduct for both. This is a great challenge for the planners of future world trade relationships.

SEMI-GOVERNMENT TRADE

In recent years, wartime stringencies compelled most belligerent nations to monopolize foreign trade in certain basic commodities, while leaving other goods in the hands of private concerns. In many cases, this system has been continued even after the end of hostilities, and some nations seem to have embraced this plan as a continuing policy.

An outstanding example is offered by the British Food Ministry, an organization vested with monopoly powers as regards food imports. Foreign trade monopolies of certain commodities also exist in a number of other European countries, especially in Eastern Europe.

The existence of state monopolies of individual commodities creates the same problems with respect to the controlled products, as does the complete foreign trade monopoly. Fair play becomes dependent upon establishment of a successful "modus vivendi". On the other hand, extensive bulk purchasing operations by such agencies as, for example, the British Food Ministry, may exert a steadying influence upon world markets under certain circumstances.

CONTROLLED PRIVATE TRADE

The multiplicity of systems under this heading represents, in fact, various forms of compromise between free trade and state trading. The underlying motivation is usually a desire to safeguard national payment balances.

Broadly speaking, this can be achieved by actually curtailing imports and increasing exports at the same time; or by limiting the availability of foreign exchange for imports and payments of debts abroad to the equivalent of export proceeds; or by a combination of both methods.

Part III of the preceding synoptical table gives a sketchy summary of various such systems widely applied in the interwar period and even today in most European countries. The ultimate in controlled private trade is reached in the so-called "compensatory" agreements, when governments determine the nature and quantity of specified goods to be so exchanged that an excess of export value over import value will result. A portion of the surplus may be payable in freely convertible foreign exchange, a determined percentage of which must be sold by the exporter to his government at official rates, whereas the balance of the excess may apply toward payment of government or private debts abroad.

An example of this type of trading is furnished by the Anglo-Romanian compensatory agreement of July, 1935. The Romanians were to ship 500,000 metric quintals of wheat and 300,000 quintals of barley to Britain. 50 per cent of the proceeds was to be used for importing British products, 30 per cent for paying Romanian government debts in the United Kingdom, 5 per cent to pay overdue commercial debts and 15 per cent was made available in English pound credits to the National Bank of Romania. When domestic wheat and barley prices subsequently rose above export level in Romania, the contract could not be completed, and a residue of £178,000 remained late in November, 1935. To clear this balance, the Romanian government concluded an agreement with the Swedish *Transfert* corporation in December of the same year. The Swedish corporation agreed to buy £258,000 worth of Romanian corn at higher than market prices. Of this sum, £178,000 were to be paid to Britain in final settlement of the Anglo-Romanian agreement; the balance of £80,000 went toward redemption of Romanian government bonds in Sweden. As owners of these bonds were not sure that these obligations could be fully honoured by the Romanian government, they were ready to turn them over at much less than face value to the

Transfert corporation, whereas the latter obtained full payment from the Romanian government in consideration for paying higher than world market prices for corn.

Debt reductions on foreign obligations, combined with direct export premiums, (in the case of the above example the Romanian government paid a 15 per cent export premium on corn), with indirect export premiums paid on the exchange proceeds and with the full gamut of trade barriers, make foreign trade a ponderous process. The experience with controlled private trade has been a long succession of discriminatory practices which have led to progressive contraction of world trade.

Discriminatory practices have not been abandoned after the second world war; on the contrary, the majority of postwar trade agreements concluded in Continental Europe belong to this type. Restrictions are unavoidable so long as balance of payment difficulties exist, but discrimination may be obviated. The forthcoming international trade conference is mainly concerned with the elimination of the many obstacles and discriminatory practices that restrict world trade, and with building the basis of a new international trade structure that will allow for expansion in goods exchanges.

If these efforts are crowned with success, and a World Food Board also emerges eventually, farmers throughout the world will be relieved of much anxiety with regard to surplus produce.

THE AMERICAN INSTITUTE OF CO-OPERATION

J. E. O'MEARA

Difficult and trying economic years to come were forecast to members of the 18th meeting of the American Institute of Co-operation meeting at Lafayette, Indiana, in August, 1946. Nearly 1,500 representatives of farm organizations and agricultural co-operative associations heard critical appraisals of their present position and advice on how to proceed in the future.

Farm co-operatives were advised to plan intelligently and be prepared to cushion any drop in price levels. This would mean an immediate review of finances with a view to getting out of debt during the "boom" period and building up reserves for the future.

Increasing competition and consequent narrowing of margins would force co-operatives to "sell" their products once again and to meet this problem they were advised to expand their education programs, train new personnel and provide for further research in, and application of, new and advanced methods of marketing.

Morning and evening sessions of the Institute covered general broad problems, such as the relation of farmer co-operatives to consumers, co-operative philosophy, nutrition and the relation between co-operatives and the churches.

There were 16 separate sessions each afternoon concerned with the detailed problems of commodity marketing and purchasing associations. Most of these were round-table discussions conducted by a panel of specialists. Besides discussing commodity problems, these afternoon meetings reviewed educational programs, legal and organizational problems, community development, labour and equipment studies, rural electrification, oil extraction, rural health and public relations.

Among those heard at the general sessions were Chester C. Davis, chairman of President Truman's Famine Emergency Committee and E. G. Nourse, vice-president of The Brookings Institution and chairman of the Economic Advisory Council at Washington. Canadian speakers were Msgr. M. M. Coady of St. Francis Xavier University, Antigonish, N.S., A. B. MacDonald, general secretary of the Co-operative Union of Canada and L. Hancock, Supervising Livestock and Livestock Products Grader, Dominion Department of Agriculture, Winnipeg, Manitoba.

THE IMPACT OF THE WAR ON DOMESTIC CONSUMPTION OF FARM PRODUCTS

FRANK SHEFRIN

Per capita food consumption in Canada increased 13 per cent between 1939 and 1944.¹ The expansion in employment and payrolls between 1939 and 1945 increased the wartime demand for food well over the immediate five-year pre-war period.² The total number of men and women 14 years of age and over, gainfully occupied, rose from 3.7 million on June 1, 1939, to 4.3 million on April 1, 1945. The number of men and women in the armed services increased by 752,000 from 10,000 to 762,000. Not only were there more people working but they were earning more money than ever before. Net national income of Canadians rose from \$4.0 billion in 1939 to \$9.7 billion in 1945.³ Working harder, earning more, unable to spend money on other consumer goods, the new and old gainfully occupied were spending more on the purchase of extra food, particularly protein.

It is estimated that Canadians spent about \$1.5 billion on food in 1943, an increase of 68 per cent over the estimated 1939 expenditure of \$911 million. The increased total expenditure was due, in part, to increased consumption and, in part, to higher prices.⁴

Increased knowledge of nutrition also brought changes in dietary habits. Advantage was taken of this nutritional knowledge in the preparation of meals at cafeterias operated on the premises of war plants.⁵ Also, during the early part of the war when Canada faced temporary food surpluses, nutritionists conducted Dominion government sponsored campaigns recommending increased consumption of dairy products, especially fluid milk, meat, and "whole wheat" bread.

In turn, the supplies of food moving into civilian consumption throughout the war period, with relatively few exceptions, were greater than the pre-war totals.

¹ Combined Committee on Non-Food Consumption Levels. *The Impact of War on Civilian Consumption*, Washington, D.C. 1945.

² The data on food consumption in Canada was compiled by the Dominion Bureau of Statistics. The report gives the estimates of supplies of food moving into civilian consumption in Canada in pounds per head, per annum, for the five pre-war years, 1935-39, and for 1940-44. The basic foods are grouped in the 14 main commodity groups. Tables for each group were computed by using a common denominator for the group, such as milk solids (dry weight) in the case of milk and milk products; fat content in the case of oils and fats; and fresh equivalent in the case of fruits. All foods were included in their basic form, that is as flour, fat or sugar, rather than cakes or other manufactured foods.

The civilian per capita supply figures were calculated after adjusting the total production figures for imports, exports, changes in stocks, marketing losses, seed, feed, non-feed industrial uses, and supplies going to the armed forces. Finally, figures of civilian supplies are calculated at the retail stage of distribution except for meats, which are at the wholesale stage. Amounts of the foods actually eaten would be somewhat lower because of the loss of weight occurring after the products reach the hands of the consumer. For certain commodities, figures of storage stocks, particularly in the hands of retailers and consumers, are not available and these figures for any individual year may not give an entirely true picture of the consumption during that year.

³ Dominion Bureau of Statistics. *National Accounts Income and Expenditure, 1938-1945*, Ottawa, 1946.

⁴ *A Report on Nutrition and the Production and Distribution of Food*. Department of National Health and Welfare. Ottawa. 1946.

⁵ The war production program gave impetus to in-plant feeding. During World War I, a few larger plants had installed eating facilities as a convenience to the workers, but little attention was given to the relationship between nutrition, good health and industrial efficiency. The picture during this war improved. Most of the large plants and about 20 per cent of the plants of less than 100 employees established satisfactory feeding facilities where employees could purchase a lunch consisting of one hot dish, dessert and a beverage.

To make sure that workers were well fed, the Industrial Section of the Division of Nutrition, Department of National Health and Welfare, was empowered to inspect Canadian war plant cafeterias. An actual inspection was made of all food services. Not only was the general layout and cleanliness considered, but also the preparation and serving of meals. The menus received close scrutiny. In order to check the probable quantities received by each person, care was taken to find out the number of meals served, and also the quantity of milk and other refreshments purchased. Recommendations were made as to menus and recipes.

Output of farm products during this period increased between 40 and 50 per cent. At times, although not reflected in the national average figures on supply, periodic shortages occurred. Transportation difficulties were also a factor in the development of regional shortages of individual foods.

As the war progressed, domestic demand for foodstuffs had to be curtailed in many instances by means of rationing.⁶ Food rationing was an essential of good food management in war years. It was a series of devices to keep shortages of particular foods from going to extremes, and to direct supplies of specific foods into high-priority uses. Food supplies, however, were sufficient to maintain rations at levels equal to the pre-war rate of consumption. The number of foods rationed was small and in many cases there were unrationed substitutes. Canada's reliance on offshore supplies of sugar made it necessary to ration this commodity shortly after the outbreak of war.

On the whole, the average quantity of food per person entering civilian consumption in the pre-war years, 1935-39, was about 1,000 pounds per year, while in 1944 the average was 1,162 pounds.⁷ The nutrient content of a food is not necessarily related to its weight and these figures should not be used without qualification. There was an approximate increase of 16 per cent in total weight of food consumed per head. On the basis of caloric intake, the increase was only seven per cent, but the shift in demand from vegetable to animal products greatly enriched the diet in proteins, minerals and vitamins. The per capita consumption of animal protein increased by 21 per cent in 1944 over the pre-war level, while the consumption of vegetable protein decreased by only three per cent.⁸ The figures indicate further that this increased consumption occurred for the most part in the more nutritious foods.

Dietary changes take place as the average per capita income rises. Even before the outbreak of war, more and more vegetable carbohydrates and vegetable proteins were fed to animals and converted into animal products. This trend was more marked during the war years. Since the detour via the animal causes a loss of about four-fifths of the calories in the foods fed, more crops must be grown to supply the same number of people with the same number of calories. To farmers this shift from vegetable to animal products is important because the value per acre of feed crops marketed as feed, is in the main less than when the same feeds are marketed through livestock products and from a nutritional viewpoint this shift is desirable.

A review of commodities shows that the consumption of milk and milk products, particularly fluid milk, increased markedly during the war period. Per capita consumption increased as purchasing power expanded and retail prices were firmly controlled. A further factor contributing to this high rate of fluid

⁶ Sugar rationing was introduced in July, 1942, and the ration has remained unchanged at one-half pound per week. Provision was made for extra sugar for home canning.

Tea and coffee were rationed in August, 1942, and the weekly ration allowed one ounce of tea or four ounces of coffee. Two subsequent increases doubled the original ration. Tea and coffee coupons were removed from the ration books of children under 12. Adequate supplies brought temporary suspension of rationing.

Butter was rationed in December, 1942, at the rate of eight ounces per week. Since March, 1944, temporary reductions were effected, reducing the ration.

Meat was rationed in May, 1943, at approximately two pounds per week. Meats with 50 per cent or higher bone content, offals, fish and poultry were unrationed. Greatly increased meat supplies brought temporary suspension of rationing in March, 1944. Rationing was reimposed in September, 1945.

Preserves were rationed in August, 1943, and variations in allowances of various items covered by the ration have been made from time to time.

Evaporated milk was placed under controlled distribution and partial rationing in October, 1943.

⁷ *A Report on Nutrition and the Production and Distribution of Food.* Department of National Health and Welfare, Ottawa, 1946.

⁸ *Food Consumption Levels in Canada, the United Kingdom and the United States,* Combined Food Board, Washington, D.C. 1946.

milk consumption was the consumer subsidy of two cents a quart authorized in 1942 and cancelled in 1946. Cheese consumption was up only slightly as all additional supplies were shipped to the United Kingdom. Butter consumption remained relatively constant until 1942 when a slight rise occurred. Rationing came into effect in December, 1942, and the consumption per capita was reduced during the following years. The consumption of all dairy products by 1945 increased by 21 per cent over the pre-war period.

Total meat consumption increased. Meat rationing did not come into effect until May, 1943, and as consumption was heavy during the early months of the year, the effects of rationing were not reflected until the 1944 annual per capita consumption figures. Consumption of pork increased during the first three years of war and dropped down to the pre-war level in 1943. This was due to the fact that all additional supplies of pork products were shipped to the United Kingdom. Total meat supplies moving into civilian consumption were up 26 per cent in 1944 and 18 per cent in 1945. There was a gradual rise in the consumption of poultry. In connection with marketings of poultry meat, it should be observed that the shortage of beef and pork which preceded the introduction of rationing in 1943, created a special market for a large quantity of poultry.

In the case of eggs, civilian consumption was maintained at about pre-war levels until 1943 when there was a sharp rise in the per capita consumption. This increase continued in 1944 and 1945. Rationing of beef and pork and the scarcity of cheese stimulated the consumption of eggs.

The tendency has been toward greater production and consumption of leafy, green and yellow vegetables than in the pre-war years.

Consumption of tomatoes and citrus fruits showed a remarkable increase. Vegetables of all kinds were also eaten in greater quantities.

The consumption of potatoes showed an immediate increase over the pre-war period with little change during the following years. Grain products moving into civilian consumption dropped to 96 per cent of the pre-war level of 1935-39.

On the whole, nutritional science infused wartime food policy. The objective was to see to it that, however much Canadians were forced to modify food consumption and to depart from peacetime eating habits, food needs were met. Adult education in nutrition, buying, cooking and canning, was given a great impetus in the war years. In general, because of higher incomes, greater employment, stabilized prices and food subsidies, the war diet of the Canadian consumer improved in nutritional quality and suffered little from the reduction in variety of available foods.⁹ However, this does not mean that the consumption reached a satisfactory level in terms of known dietary standards.

⁹ A study of changes in the food habits of Canadian people was made for the Division of Nutrition, Department of National Health and Welfare, by the Canadian Institute of Public Opinion in December, 1942, and repeated in December, 1944. Several thousand people across Canada were asked what they had eaten for breakfast, lunch, dinner and between meals for one day. Since the people were questioned on different days of the week, the results were considered representative. The data were analysed by provinces, economic groups, and urban and rural groups.

In general, it was found that although there were no great changes in over-all food habits in comparing the two years, certain trends or tendencies were noticeable: a slightly greater number of people were using milk, citrus fruit and breakfast cereals, while a slightly smaller number were eating cheese, non-citrus fruits, bread and meat. No change was found in the use of vegetables. A breakdown by economic groups revealed that the total usage of the food groups studied was greater in the upper and middle income groups than in the lower, except for potatoes. The use of food on farms decreased considerably in some items, while an increase occurred in cities over 100,000 population.

While recognizing the limitations of a one-day study, it was concluded that these people who, in 1942, were already using the protective foods, increased their use of them, in many cases substantially. On the other hand, not over 10 per cent of the total number surveyed had shifted into more desirable food habits. (*Canadian Nutrition Notes*. Volume 1, No. 7, May, 1945.)

PRE-WAR EXPORTS OF PERISHABLE PRODUCTS FROM THE PORT OF MONTREAL

RAYMOND CHOQUETTE

Montreal is Canada's most important port of exit for Canadian produce. This paper is concerned particularly with the movement of perishable agricultural products from this port in the three years immediately preceding the outbreak of war. Data were obtained on the trade of three ports, Saint John, Halifax and Montreal, the last handling the greatest volume.

Since the development of refrigeration, the trade in perishable products has become world-wide. Exports valued at 38 million dollars passed through the port of Montreal alone during the navigation year 1939, 42 million dollars in 1938 and 43 million dollars in 1937. The average tonnage per year for the three years under review was 343 million pounds.

The Export Meat Trade.—Meat products accounted for approximately half of the total value of exports listed above for the three years, 1937, 1938 and 1939. The average annual total volume of meat passing through Montreal for that period was 122 million pounds with an average value of 20 million dollars. For the same three-year period, total shipments from Montreal averaged more than 2.5 million pounds of beef, 108 million pounds of pork and over 11 million pounds of other meats, practically all of which were destined for the United Kingdom. Bacon constituted the bulk of all the pork exported, for which Great Britain was virtually the sole outlet.

The export trade in poultry for the 1939 season was the smallest of the three years recorded. Shipments for that year showed a decrease of 16 per cent as compared with 1938 and a greater decrease of 80 per cent when compared with 1937. During those years, London alone imported annually an average of nearly 72 per cent of all poultry exported from the port of Montreal.

The Export Lard Trade.—Canada, in the three-year period 1937-39 furnished nearly 29 million pounds of Canadian lard to Britain via the port of Montreal. Total tonnage passing through this port amounted to 164 million pounds, of which 83 per cent came from the United States. Between 1937 and 1939 the total volume increased by more than 9 million pounds.

The Export Egg Trade.—The export egg trade out of Montreal for the year 1939 is the smallest on record for many years. Total shipments amounted to 36,965 cases, a decrease of 19,361 cases as compared with 1938, and 11,787 cases when compared with 1937. This decline can to a large extent, be attributed to high prices. Eggs were 22 cents per dozen in 1939 as compared with 17 cents per dozen during the 1937 and 1938 seasons. London, Glasgow and Liverpool were the most important ports of destination.

The Export Butter Trade.—Butter exports from the port of Montreal for the 1939 season totalled 4,876,368 pounds, an increase of 1,421,784 pounds over 1938 and 1,581,440 pounds over 1937. The price of butter averaged 21 cents a pound in 1939, 22 cents a pound in 1938 and 28 cents a pound in 1937. Total value of exports in 1939 amounted to \$1,024,037, an increase of \$264,026 over 1938 and \$101,457 over 1937. London again came to the front in 1939 and was the leading butter market, displacing Liverpool which held first place the year before.

The Export Cheese Movement.—Exports of cheese from Montreal for the three years brought a return of over 34 million dollars. Value of the exports for 1939 was \$10,679,773, showing a decrease of \$920,420 as compared with 1938 and an even greater decrease of \$1,633,607 when compared with the returns for the 1937 season. However, prices were responsible for the decline in value.

Total exports for 1939 amounted to 82,152,100 pounds which is equivalent to 9,128,011 boxes of 90 pounds each. This was 535,275 boxes more than were

shipped in 1938 and 6,989 boxes more than in 1937. London was the chief market for Canadian cheese leaving Montreal during the three years under review. Liverpool was second in importance as an importer of cheese. Avonmouth was in third place in 1939, and Manchester was next in importance.

The Export Apple Trade.—Shipments of apples during the 1939 season were much below those of 1937 and 1938. The 39 million pounds shipped in 1939 represented a decrease of 25 million pounds as compared with 1938 and 14 million pounds when compared with 1937. Average annual value of apples shipped during the three years 1937, 1938 and 1939 was estimated at \$1,244,727. The principal markets to which the produce was sent were Liverpool, Glasgow and London.

The Fish Export Trade.—The Canadian fish export trade from the port of Montreal for the 1938 season, from a financial standpoint, as well as volume of business, was fairly satisfactory. Shipments to the different foreign ports amounted to 2,339,700 pounds, an increase of 834,000 pounds over 1938 and 230,100 pounds over 1937. Salmon was the most important variety of fish exported with a three-year average of 1,252,433 pounds, or 63·4 per cent of the total fish exported. The bulk of the shipments was to London, Liverpool and Glasgow.

Shipping Business.—During the 1938 and 1939 seasons, services were maintained with regularity between Montreal and different ports of destination in the United Kingdom and other places in the world. The opening and closing dates of navigation were April 27 and December 2 or the first and last departure of cargoes, so far as the perishable products were concerned.

During the navigation year of 1939 a total of 320 million pounds of perishable produce was loaded at the port of Montreal which indicated a slight decrease as compared with the previous year. During 1939, a total of 120 million pounds of produce was exported from Montreal by one company. This was 37·5 per cent of the total exports cleared through the port. Of the years in which statistics were available, 1938 was the year with the largest trade. Steamers were loaded with full cargoes to four different destinations, London, Liverpool, Hamburg and Antwerp.

Sailings were maintained during the navigation season by another company, the second in importance. This company carried a total of 225 million pounds in the two years surveyed, regularly calling at Avonmouth, Bristol, Cardiff, Glasgow, Liverpool, London, Southampton and Swansea.

A third company also handled a large outgoing cargo averaging more than 64 million pounds per year and destined to Bristol, Cardiff, Dundee, Leith, Manchester, Newcastle, Swansea and St. John's, Newfoundland.

Six other steamship companies and agents maintained a regular service between Montreal and non-Canadian ports during the navigation seasons of 1938 and 1939.

Expansion of Export Trade.—Expansion of Canada's export trade may be facilitated by consideration of the following points:

1. Producers should make their production conform to the quality desired by foreign consumers.
2. Products of highest quality only should be shipped. Uniformity and careful packaging of products are also important.
3. Efforts should be made to increase the speed of transportation.
4. More extensive advertising of Canadian products in other countries.

NOTES

The United States is expecting in 1946 the greatest volume of crop production in its history. Production of feed grains will amount to 127·5 million tons, four per cent above the 1942 high. This total is made up of 3,374 million bushels of oats, 255 million bushels of barley and 88 million bushels of soybean grain. Production of food grains at 37·4 million tons is also an all-time high. Wheat production, winter and spring, totals 1,169 million bushels, 46 million bushels larger than any previous crop in history.

Brief notes on the 24th Annual Agricultural Outlook Conference held in Washington in October of this year.

Dr. Goodsell in dealing with the farm cost situation stated that:

Farmers in the United States entered the post-war era on a substantially higher level of costs than that of 5 to 7 years ago. War-born scarcities of manpower and material sent farm wage rates and feed prices soaring, pushed up prices of building materials, equipment and supplies, and consequently forced total cash production expenses upward at a rapid clip.

Farmers' out-of-pocket operating expenses mounted from something less than 6·2 billions in 1940 to nearly 11·3 billions in 1945, an increase of 82 per cent. At the same time, gross farm production increased 15 per cent, —leaving the outlay per unit of product nearly 60 per cent above the 1940 level. Prices of production goods, particularly feed and labour, rose sharply during the first three-quarters of 1946. Further increases are in prospect for some expense items during the balance of 1946 and at least the first part of 1947. These increases will raise still higher the overall level of farm production costs. But, farm production expenses are incurred chiefly in producing commodities for sale, and prices for most farm products also seem likely to remain at relatively high levels through 1947.

L. A. Wheeler describing the outlook for agricultural exports said that:

Agricultural exports in 1947 will continue at a high level, but they will probably be below the level reached in the first half of 1946, when the emergency abroad was in its most critical stage and when great efforts were made by the United States to conserve food and speed its shipment to hungry people overseas.

Dr. Margaret Reed outlined the outlook for farm family living in 1947:

What can be expected during the coming year? Past behaviour of families and conditions likely to exist in 1947 point to high expenditures for family living. The conditions making for high spending in 1947 include very high gross income in 1946, the likelihood of a high income in 1947, low debts and high liquid assets in the form of bank deposits and United States savings bonds, higher consumer prices probably through at least the first part of 1947 and an expansion of consumer supplies, especially of automobiles, household equipment, and furnishings and building materials. These urgently needed items have been in very short supply during the war.

Demand of farm families is likely to be high for automobiles and equipment and building materials of various kinds. Its magnitude is indicated by the recent national survey of liquid assets conducted for the Federal Reserve Board by the Bureau of Agricultural Economics. Early in 1946, 6 per cent of the farm operators were planning to buy automobiles, 22 per cent were planning to buy other consumer durables, 15 per cent were planning to repair their dwellings and 18 per cent to repair farm buildings. Because of limited supplies, all these purchases will not be made in 1946. The backlog of demand from the war years will carry over into 1947 and probably to some extent into 1948.

Spending on electrical appliances will be affected by this backlog of demand and also by the expansion of electric power to more farm families. A large Rural Electrification program is a forerunner of expanded purchases of electrical equipment and also of the remodelling of dwellings. Having electricity makes people want other modern conveniences and even makes some of these, such as running water, more feasible.

Expenditures for health will probably not continue to rise as during the war but they will probably remain at a relatively high level compared with 1941, for example. The widespread discussion of the need for improved health facilities and the expansion of various health insurance programs will promote expenditures above those of the pre-war years, even if little or no rise occurs in the prices charged.

The United States Secretary of Agriculture on October 15 issued a statement on price decontrol of livestock, meats, and other livestock products. The statement follows:

"The Price Administrator has today submitted, and I have approved, an order which removes price ceilings from all livestock and all food or feed products processed or manufactured in whole or substantial part from livestock. This price decontrol action has been taken following detailed conferences with the President and is pursuant to provisions of the Price Control Extension Act of 1946, which specifically authorizes the removal of maximum prices from any agricultural commodity if, in the judgment of the Secretary of Agriculture, such action would be consistent with the purposes of the Act.

"In my judgment the action taken today is consistent with the purposes of the Act in that it will promote the earliest practicable balance between production and demand for livestock products and facilitate a successful transition of the livestock industry to a sound peacetime basis.

"In order for the beef cattle industry to be in a sound condition and able to provide a continuous supply of beef to meet consumers' demands, it is essential that the number of cattle on our farms and ranches be no larger than the carrying capacity of the pastures and range land. Otherwise, the grazing land will be depleted and future production impaired. Moreover, severe hardship for range cattle producers could result in the event of only moderately unfavorable weather.

"At the present time the number of beef cattle on farms and ranches is dangerously high, and this condition will become worse unless liberal marketings for slaughter are resumed without delay. This could not happen when there was constant agitation for the removal of price ceilings and when announcement was made that a decontrol petition would be filed at the very time that the run of grass-fat cattle should be at its height."

The Agricultural Prices Support Board will support the potato market in the surplus producing provinces of New Brunswick and Prince Edward Island. This decision follows representations made in Ottawa, October 1-2, by a 30-man delegation representing potato growers of the five Eastern Provinces.

The Chairman of the Board explained that price support would be provided by two methods. The first method, to go into effect at an early date, is the purchase of potatoes for processing, chiefly into starch. Prices for these potatoes delivered at factories will be \$1.00 per 100 pounds for No. 1 potatoes, 80 cents per 100 pounds for No. 1 Small and No. 2 potatoes. Exact prices for field run potatoes, containing different percentages of No. 1's, will be announced shortly. Quantities purchased and times of delivery will be governed by factory capacity.

The second method of supporting prices is the Board's offer to buy No. 1 table potatoes in the spring of 1947. The offered price for these potatoes is \$1.00 per 75 pounds, bagged, inspected and loaded on cars at shipping points in New Brunswick and Prince Edward Island. The Board said it would announce delivery date and other particulars shortly.

During the period 1938 to 1945 the net income of farm operators from farming operations increased remarkably. According to a report issued by the Dominion Bureau of Statistics the net income for the last four of these eight years was more than double the income received during the first four years. The high point was reached in 1944 when farm operators received a net income of \$1,228 million as compared with \$387 million received in 1938. The increase is the result not only of substantially higher prices for farm products but also as the result of a greater volume of production together with lower relative increases in operating costs. The net income of farm operators from farming operations for 1945 was approximately \$223 million less than the net income for 1944. The decrease took place chiefly in the Prairie Provinces where smaller crops brought about substantial reductions in the cash income received from the sale of farm products.

Farm operating expenses and depreciation charges also increased during the period. Farm expenses increased less rapidly than gross income with the result that there were gains in the net income of relatively larger proportions. Operating expenses went up about 51 per cent between 1938 and 1945, and while gross income including supplementary payments increased by 98 per cent, net income rose nearly 160 per cent.

Canadian apple crop is estimated at 16,739,000 bushels, being more than twice that of last year and 20 per cent greater than the 10-year 1935-44 average, according to figures released by the Dominion Bureau of Statistics in November. Apple crops in Nova Scotia, Quebec and Ontario are heavier than were anticipated in September, while in New Brunswick and British Columbia no change occurred.

There were 89,849,300 head of poultry on farms in Canada on June 1 this year, according to estimates by the Dominion Bureau of Statistics, as compared with 89,504,500 on June 1 last year, an increase of 0.4 per cent.

Hens and chickens numbered 85,459,200, slightly more than on June 1 last year, when the total was 84,724,800. Turkeys decreased in number to 3,037,800 birds, 91.3 per cent of last year's total of 3,325,600.

The number of geese declined by four per cent, being 615,700 compared with 641,200 on June 1 a year ago. The Canadian total duck population was 736,600, being 90.6 per cent of the 1945 total of 812,900.

BOOK REVIEW

SCHULTZ, Theodore W.—*Agriculture in An Unstable Economy*. McGill-Hill Book Company Inc., New York, 318 pages, 1945.

With the coming of peace, farmers in the United States as well as in other countries are uneasy about their future. Post-World War I experiences give rise to such misgivings as chronic surpluses of agricultural commodities, depressed price levels, and very low farm incomes. Dr. Schultz in his new book deals with these problems.

In the preface the author states: "This study is devoted . . . to the functions of agriculture in the political economy and to the effects of non-farm activities upon agriculture. Its main purpose is to lay the foundations for a national policy with regard to agriculture".

T. W. Schultz is a Professor of Agricultural Economics at the University of Chicago and has done considerable research and writing in the field of agricultural policy.

He has divided the book into four major parts, as follows: Prospective conditions affecting agriculture; Fundamentals of the Agricultural problems in an expanding and fluctuating economy; Governmental programs and controls; and Problems in Agricultural policy.

The book gives a detailed discussion not only of some of the basic problems within agriculture, but especially the maladjustments between agriculture and the rest of the economy. The author analyses the two main problems of overcrowded and underproductive employment, and chronic instability of farm income. The human factor is also dealt with.

In dealing with farm income and farm price, Schultz makes a number of points which are of interest to Canadian farmers and economists. He suggests two ways of reducing income instability caused by fluctuations in demand: (1) stabilize the industrial-urban economy at high production and employment; and (2) make compensatory payments to farmers when business becomes depressed and unemployment spreads. Under farm prices he indicates that obsolete price relationships burden agriculture. He says: "We begin in error when we try to establish, as is done under the parity-price formula, a relationship among the prices of farm products, and a relationship between farm and non-farm prices that happened to prevail during a particular past period. To guide farmers in their production, prices of farm products must be forward, not backward, in their orientation. They should be based on current and expected supply and demand, not upon some historical situation".

He concludes that: "The immediate post-war years offer a real opportunity to establish effective necessary, forward-looking policies for agriculture".

Although the book deals with American conditions, much of what is said is applicable to Canadian agriculture.

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T H E
E C O N O M I S T A N N A L I S T

A Review of Agricultural Business
Issued Quarterly by the Economic Division
Marketing Service
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Minister of Agriculture

The ECONOMIC ANNALIST

A REVIEW OF AGRICULTURAL BUSINESS
ISSUED QUARTERLY BY THE ECONOMICS DIVISION
MARKETING SERVICE
DEPARTMENT OF AGRICULTURE, OTTAWA

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February, 1947

THE ECONOMIC SITUATION

In looking ahead to 1947 the principal factor to consider is whether Canada's productive facilities, which during 1946 have been in the process of readjustment to peacetime conditions, will be maintained at near full employment levels.

So far as the probable level of demand is concerned, the continuance of certain favourable conditions now seems apparent. The foreign demand for Canadian goods, both primary and manufactured, seems fairly well assured throughout 1947. With respect to domestic demand the accumulated requirements for capital goods are extensive.

These favourable demand conditions should be sufficient to provide the base on which a continuing high level of employment can be achieved during 1947. However, this cannot be taken for granted. Developments could well occur which would place serious limits on the achievement of this objective.

A retarding factor could be a recurrence of prolonged labour-management disputes in "key" industries either in the United States or Canada.

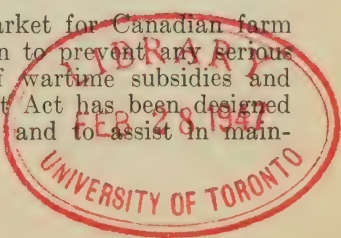
Domestic Demand for Food.—The general and appreciable increase in demand for food during the war years was a direct outgrowth of considerably enhanced incomes of the whole population. This increase has continued into the post-war period and exhibits itself in a considerable rise in consumption of certain foods at higher prices.

On the whole, demand in Canada for food products is expected to remain relatively strong over most of the year 1947.

Prices.—A review of the past seven years shows that the index number of farm prices as at August, 1946, was 187·3, almost 119 per cent above the index number reported in August, 1939. On the other hand the index number of prices of goods and services used by farmers as at August, 1946, was 149·0, an increase of 50·4 per cent over the annual 1939 average index of 99·1. By November 15, prices received by Canadian farmers for agricultural products averaged higher than at the beginning of the year or at November 15, 1945, the index being 182·9.

During the year 1946 there has been a gradual increase in the overall price index. The general wholesale price index increased by 6·5 per cent, from 104·6 in January, 1946, to 111·4 in November, 1946. The index of wholesale prices of fully and chiefly manufactured goods also showed a steady increase, rising from 95·3 in January, 1946, to 101·2 in November, 1946, an increase of 6·2 per cent. The wholesale price index for farm products, while not showing the same steady increase, did rise from 109·6 to 113·4 for the same period, or 3·5 per cent.

While there is every indication of an assured market for Canadian farm produce for some time to come, steps have been taken to prevent any serious slump in prices as a result of the discontinuance of wartime subsidies and bonuses. For example, the Agricultural Prices Support Act has been designed to prevent undue declines in prices of farm products and to assist in maintaining adequate and stable returns for agriculture.



ANNUAL AND MONTHLY INDEX NUMBERS
WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES (a)

Year	Wholesale Prices 1935-39=100			Farm Prices of Agricultural Products 1935-39=100	Commodities and Services used by Farmers 1935-39=100		Cost of Living 1935-39=100	
	Farm Products (b)	Field Products (c)	Animal Products (d)		Eight Factors (f)	Eleven Factors (g)	Farm Living Costs (h)	Urban Living Costs (i)
1913.....							79.6	79.1
1914.....							82.0	79.7
1915.....							86.3	80.7
1916.....							93.6	87.0
1917.....							111.6	102.4
1918.....							131.4	115.6
1919.....							143.0	126.5
1920.....							170.7	145.4
1921.....							139.5	129.9
1922.....					126.9	133.2	127.5	120.4
1923.....					118.7	123.7	127.9	120.7
1924.....					122.5	132.6	125.1	118.8
1925.....					124.3	131.8	123.6	119.8
1926.....	144.4	158.5	130.2		120.6	129.3	120.9	121.8
1927.....	138.6	149.4	127.8		120.9	130.1	119.5	119.9
1928.....	136.3	134.3	138.2		119.4	123.2	118.3	120.5
1929.....	140.8	137.2	144.4		118.4	127.5	117.4	121.7
1930.....	119.5	105.8	133.3		105.7	116.3	113.7	120.8
1931.....	78.9	65.0	92.7		91.8	100.8	103.7	109.1
1932.....	65.5	60.4	70.5		88.7	93.4	97.7	99.0
1933.....	69.3	69.3	69.2		88.4	90.0	95.7	94.4
1934.....	83.5	80.5	86.5		96.8	96.0	97.8	95.6
1935.....	89.2	84.4	94.1	88.0	95.6	96.0	97.9	96.2
1936.....	97.9	102.2	93.7	96.9	98.4	98.0	98.3	98.1
1937.....	117.4	128.9	106.0	119.7	108.5	105.4	102.9	101.2
1938.....	102.9	100.9	104.8	105.0	101.1	101.5	102.0	102.2
1939.....	92.6	83.7	101.5	91.8	96.1	99.1	99.5	101.5
1940.....	96.1	85.4	106.7	96.8	102.3	105.8	108.6	105.6
1941.....	106.6	88.9	124.4	110.2	108.2	114.2	114.2	111.7
1942.....	127.1	109.7	144.6	133.1	119.7	128.1	119.2	117.0
1943.....	145.4	129.0	161.8	157.8	122.4	136.0	121.7	118.4
1944.....	155.3	144.5	166.1	171.8	125.7	139.5	122.8	118.9
1945.....	160.3	150.4	170.2	176.5	125.5	141.2	123.2	119.5
1946.....	164.9	148.6	181.2	183.5	127.7	145.4	127.1	118.3 123.6
1946								
Jan.....	161.3	148.9	173.7	179.2	125.9	140.4	124.6	119.9
Feb.....	162.0	149.3	174.7	180.3				119.9
Mar.....	161.4	149.7	173.1	180.2				120.1
Apr.....	164.4	150.4	178.4	182.8	128.3	146.9	126.1	120.8
May.....	165.7	151.1	180.3	184.5				122.0
June.....	168.8	152.2	185.4	186.3				123.6
July.....	170.7	156.3	185.1	188.0				125.1
Aug.....	166.8	149.9	183.7	187.3	128.8	149.0	130.5	125.6
Sept.....	164.2	145.3	183.1	183.8				125.5
Oct.....	164.0	143.8	184.2	182.6				126.8
Nov.....	164.2	143.1	185.3	182.9				127.1
Dec.....	165.3	143.0	187.7	183.7				127.1

(a) All index data computed by Dominion Bureau of Statistics.

(b) Canada. Dominion Bureau of Statistics, Prices Branch. *Wholesale Price Index Numbers of Canadian Farm Products*. (Mimeo.) Ottawa. Feb. 1947. Wholesale prices of products of Canadian farms.

(c) Ibid (b). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid (b). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agricultural Division. *Index Numbers of Farm Prices of Agricultural Products*. (Mimeo.) Ottawa. Monthly.

(f) Canada. Dominion Bureau of Statistics, Prices Branch. *Price index numbers of commodities and Services Used by Farmers*. (Mimeo.) Ottawa, Jan., Apr. and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binding twine, seed and hardware.

(g) Ibid (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) Ibid (f).

(i) Canada. Dominion Bureau of Statistics, Prices Branch. *Prices and Price Indexes, 1913-43*. Ottawa. 1945 and (Mimeo) Nov. 1946.

There are minimum prices for wheat, barley, oats, flaxseed, soybeans, sunflower seed, and rapeseed.

The large scale export commitments have a stabilizing influence on the market with the result that prices for products consumed domestically remain in more or less close proximity to the contract price. The farm commodities directly affected by this arrangement are wheat, flax fibre, hogs, beef cattle, mutton and lamb, cheese, evaporated milk, and eggs.

Canada's Agricultural Program 1947.—Early in December, 1946, agricultural officials from all parts of the country gathered in Ottawa to discuss Canada's Agricultural Program for 1947. Also present, at the invitation of the Agricultural Supplies Board, under whose auspices these Conferences have been held since 1942, were representatives of the British Ministry of Food, the United States Department of Agriculture, and the Royal Netherlands Government.

The Conference was in agreement that for most items production recommendations for 1947 should be as high or higher than in 1946. How this production was to be achieved was the subject of a great deal of discussion. An increase of feed grains at the expense of wheat acreage was agreed upon, with the suggestion that a price incentive in the form of an acreage bonus for barley would be necessary if this shift were to be obtained. The Conference also agreed that increases in hog marketings, butter and cheese production, and egg production, would be necessary if domestic requirements and export contracts were to be filled.

Supply Situation.—In order to meet the objectives set out in the Conference, steps were taken to assure adequate supplies for production purposes. In 1946, Canada used a record tonnage of fertilizers. For 1947 there is a severe world shortage of all fertilizers. However, arrangements have been made to supply Canada with the same tonnage as was used in 1946.

Minimum farm machinery requirements of Canadian farmers including veterans, to be settled on the land during 1947, amount to not less than 111 per cent of the machines and equipment, their attachments and repair parts made available to Canadian agriculture in 1946. Efforts are being made to attain this objective. Steel has been earmarked for Canadian manufacture of farm implements and plans have been made for increased importation of heavy machines from the United States. There may be difficulties in getting increased supplies, due to inadequate supplies of steel and inflated United States prices for farm machinery.

In regard to feed, animal proteins are definitely in short supply and will remain so for the first half of 1947, unless there is a heavy pilchard catch on the Pacific Coast. Vegetable protein production capacity has been increased, but shortages of materials such as flax, soybeans and peanuts have been apparent, and unless more soybeans or peanuts can be imported, protein feed shortages will likely continue.

Mill by-products in 1947 should be equal to 1946 supplies, provided rigid export controls are kept in force and flour production remains at present high levels.

The supply of farm labour during 1947 is not likely to be much larger than it was during the past season.

Decontrol.—A further step in the orderly removal of emergency controls became effective January 13, 1947. It involves the removal of a variety of goods and services from price control, reducing the controlled list largely to goods of basic importance in living costs and production costs.

This change is in accordance with the policy of controlled readjustment which was outlined by the Prime Minister early in 1946. It is part of a

plan designed to eliminate war-imposed restrictions just as promptly as is consistent with the prevention of the boom and collapse in prices which was typical of developments after the first world war.

It is more than a year since the end of hostilities. Production, though hampered by shortages of materials and by the effects of industrial disputes, is now increasing rapidly. While there are still many shortages, some of them severe—competition is increasing and producers are less inclined to assume that the market will readily absorb price advances.

The Dominion Government has indicated that the time is not yet ripe to remove all price controls. Prices of many basic foods, clothing, certain basic materials, and rentals would increase very substantially if all controls were now removed.

The list of goods and services which still remain subject to price control contains most of the basic foods, practically all articles of clothing, boots and shoes, most textiles, home furnishings, coal and wood fuels, the major household appliances and heating and plumbing equipment, automobiles, tires and gasoline, rentals, household laundry services, restaurant prices, freight rates, storage rates, a variety of basic materials such as steel, copper, rubber, lumber and pulp, and certain other goods which are important in production costs, such as farm machinery.

Among the goods which are being released from price control are the majority of items which may be described as household equipment and supplies, including furniture, small appliances, kitchen and cooking utensils, tableware and cutlery, brooms and brushes, pails, radios, pianos and clocks. Tools and garden equipment, handbags and leather luggage, paints and varnishes, and a number of building supplies such as clay products, cement, stone, and sheet metal products are also decontrolled. In the sphere of food, the important deletions are fresh vegetables and fresh fruits except apples, most kinds of fish, and ice. Certain imported foods, such as tapioca, fruit juices, and peanuts are also deleted, as well as canned fruits and vegetables other than the large staple items. Carpets and linoleum are the main items in the sphere of textiles. Only a few articles containing cotton are decontrolled because of the continuing shortages and the large subsidies which are still being paid on the primary materials. Among the services, barbering, hairdressing and beauty parlour prices and moving picture admissions are no longer subject to price control.

There are a number of reasons behind the choice of these items for release from price control.

1. Improvement in supplies;

2. Administrative problems.—The burden, expense and complexity of administration when viewed against the lessening risk of serious price advances threw the balance toward decontrol in some fields.

Cost-of-Living.—The cost-of-living index increased by 26 per cent between August 1, 1939, and December 2, 1946, compared with a 19 per cent increase between August 1, 1939, and December 1, 1945. The fairly rapid rise in cost-of-living during the past year has in part been due to removal of subsidies and decontrol. The recent announcement covering the decontrol of many more items will likely result in some increase in cost-of-living.

The index of farm family living costs increased from 99·2 in the fall of 1939 to 130·5 in the fall of 1946, an increase of over 32 per cent. Between January, 1946, and the most recent month available, August, 1946, the index rose by 4·7 per cent.

THE AGRICULTURAL PRODUCTS CO-OPERATIVE MARKETING ACT, 1939

W. F. CHOWN.

In 1939, during the Royal visit to Canada, Their Majesties visited parliament and on May 19 in the Senate Chamber the King addressed parliament and gave Royal assent to certain legislation passed during the 1939 session. Included in this legislation was an act to assist and encourage co-operative marketing of agricultural products known as *The Agricultural Products Co-operative Marketing Act, 1939*.

For several years after its enactment a variety of products were marketed under the provisions of this Act. Because of the keen demand for agricultural products that has prevailed during more recent years the Act has fallen somewhat into disuse. In spite of this, one association, The Saskatchewan Forage Crop Growers' Co-operative Marketing Association Ltd., has found it advantageous to use the Act in each year and many millions of pounds of alfalfa and other forage crop seeds have been marketed under its terms.

Surplus supplies of some products have already developed and more may be anticipated in spite of a continuing world shortage of most food products. Enquiries regarding the Act are being received and therefore it is timely that something be published concerning the Act, its purpose, and application.

Purpose of the Act.—The Dominion Government, represented by the Minister of Agriculture, may by agreement with certain persons authorize them to make initial payments to primary producers on delivery of agricultural products (except wheat) for sale on a co-operative plan, and undertake to reimburse them if the amount realized by sale is less than the amount of the initial payments and marketing charges. In view of this undertaking the books and accounts must be audited by a qualified accountant approved by the Governor in Council and any payments subsequent to the initial payments must also be approved by the Governor in Council.

As farmers are usually hard pressed for cash there is a tendency to flood the market and thus depress prices. Provided a reasonable payment is made at the time of delivery with which to meet the more pressing obligations, marketing can follow a more orderly course and a higher return be realized.

Persons who might make initial payments may not have the necessary money or be willing to risk the loss that will ensue if prices decline. With the initial payments and costs guaranteed they are more willing to use their money for this purpose and if necessary can use the agreement for additional security for a loan from one of the chartered banks. Bank loans have been the usual method of financing.

Persons with Whom Agreements May be Made.—Under the Act, as amended, the Minister may enter into an agreement with a co-operative association, a processor of agricultural products, or a selling agency authorized to act for one or more co-operative associations, one or more processors, or one or more associations and processors. If a co-operative association represents a sufficient number of the producers in an area or handles a sufficient proportion of the produce of the area, an agreement may be made with it. The same is true of a processor provided he is willing to market on a co-operative plan. If there are several associations or processors in an area it may be desirable that they designate a selling agency to eliminate competition within the area and have one pool for the area. A single association or processor may not have proper sales facilities and so wish to designate a selling agency which has sales connections.

Co-operative Plan.—According to the Act, a "co-operative plan means an agreement or arrangement for the marketing of agricultural products which provides,

- (i) for equal returns to primary producers for agricultural products of like grade and quality;
- (ii) for the return to primary producers of the proceeds of the sale of all agricultural products delivered thereunder produced during the year, after deduction of processing, carrying and selling costs, and reserves, if any;
- (iii) for an initial payment to primary producers. . . ."

When a farmer or rancher delivers produce for sale on such a plan he surrenders title to the product and acquires in exchange a fractional interest in a pool and in return will receive exactly the same as other participants for the same grade and quality. The product may be graded upon delivery, or grading may be deferred until after a processing operation. Statistical records must be kept of the quantity brought in and of the quantity and grade of the processed product at the credit of each member. When the pools are closed out the settlement price is determined and the producer given credit for his interest in the pool or pools.

Initial Payments.—Initial payments are subject to negotiation and are limited to eighty per cent of the average price paid to producers during the previous three years. In arriving at the initial payment the market outlook for the product as well as the price during the previous three years is taken into consideration. The percentage allowed may actually be well below the maximum of eighty per cent.

Marketing Charges.—The processing, carrying and selling costs guaranteed are also the subject of negotiation and the maximum allowance is set out in the agreement. In the event of a loss only the actual costs up to the maximum are allowed. If the costs exceed the maximum only the costs stipulated will be allowed in calculating the government's liability. Interest on borrowed money and cold storage costs may be allowed as well as the ordinary costs of receiving, grading, processing, storing and marketing. The Act also permits an allowance for a reserve to be included.

Procedure.—Co-operative associations or processors which desire to market agricultural products under the Act should write the Director of Marketing Service, Dominion Department of Agriculture, Ottawa, for application forms. In the forms will be entered information regarding the applicant, the product to be marketed, the initial payment desired, details of marketing costs and the desired maximum to be allowed. The information requested includes the names of officers and auditor, the area served, the quantity of product likely to be marketed, and price information.

In view of the variation in types of agricultural products and in methods of marketing such products, each application when received is dealt with by the Minister on its own merits. If the application is found to be in order an agreement is drafted and if this is satisfactory to the applicant, approval of the Governor in Council is obtained and the agreement signed.

If the agreement is between the Minister and a selling agency, a satisfactory agreement between that selling agency and the persons for whom it is acting must be entered into, prior to the signing of the agreement by the Minister.

With an agreement in its possession the marketing agency arranges its own financing and proceeds to take delivery and to market the product. The sales proceeds are used first to retire borrowing. Later, when a surplus becomes available, further payments to producers, either interim or final, may be authorized. Requests for approval of such payments are to be accompanied by an auditor's report.

If the sale proceeds are less than the initial payments and processing, carrying and selling charges, the government makes up the deficiency.

Products Marketed.—To date the Act has been used in all provinces except Nova Scotia. The products that have been marketed include forage crop seeds, coarse grain seeds, honey, onions, potatoes and the pelts of ranch-bred fox and mink. The use of the Act has been restricted to annual crops.

While no financial loss has resulted so far from any of these agreements, the government has entered into agreements when the markets were uncertain and marketing organizations have been enabled to finance when they were otherwise unable to arrange credit.

For 1946-47 agreements are in effect covering forage crop seeds and potatoes, and several applications covering fox pelts are being negotiated at the time of writing.

NOTES

Production of shorn wool in Canada in 1946 is estimated at 13,711,000 pounds compared with 14,513,000 pounds in 1945. The reduction in the 1946 clip is largely due to reduced numbers of sheep shorn which are estimated at 1,793,600 in 1946 compared with 1,917,000 in 1945. For all Canada the average yield per fleece as reported by wool growers was the same in both years. The 1946 total wool clip is the smallest since 1942 but is still above the pre-war (1935-39) average of 12,243,000 pounds.

Trade union membership in Canada decreased slightly during 1945, but was still larger than in any year with the exception of 1944. According to the Thirty-fifth Annual Report on Labour Organization in Canada for the year ending December 31, 1945, which will soon be released, there were approximately 711,000 members at the end of 1945. This is a decrease of about 13,000 or 1.8 per cent from 724,000 recorded in the previous year and almost twice the membership of 359,000 in 1939. Of an estimated 2,843,400 non-agricultural wage, and salary workers, 14 years of age and over, 25 per cent were members of trade unions in Canada at the end of 1945.

The slight decrease in members which occurred during the year 1945 was due mainly to the reduction of employment in certain highly concentrated large scale manufacturing projects for the production of material for the prosecution of the war, with a resultant loss in membership in some of the largest local unions.

The gross value of principal field crops produced on Canadian farms in 1946 is estimated at \$1,238,645,000. This is the fifth highest gross value recorded since the series was commenced in 1908, and has been exceeded only in the years 1918, 1919, 1920, and 1944. Highest prices during the immediate post-great war period accounted chiefly for the enhanced value of production recorded in 1918-20, while a relatively high level of production was largely responsible for the greater value figure of 1944. This year's figure is about 9 per cent above the 1945 gross value of production of \$1,135,264,000, the increase being largely accounted for by a higher level of production in the west this year, although increased prices for some crops have also exerted an upward pressure.

The 1946 wheat crop is valued at \$477,487,000, which is \$124,446,000 greater than the revised 1945 value of \$353,041,000. This increase is largely a reflection of the higher production obtained in the Prairie Provinces this year.

The tobacco crop this season reached the record level of 134,356,000 lbs. and exceeded production last season by 42,011,000 lbs. The pre-war 1935-39 average harvest was only 76,557,000 lbs. The area planted shows a 27 per cent increase since 1945 at 118,388 acres and yields for the most part were considerably better than those of a year ago.

THE LAW OF DIMINISHING RETURNS¹

H. L. PATTERSON

The extent to which we can profitably invest in productive capital or labour on a given land resource, is always an important consideration in farm management. The fact that increased applications of labour and capital to a given area of land may not pay, imposes limitations on any plan of operations and cannot be ignored, if the operator is to earn a good living.

John Stuart Mill expressed this thought in 1902² when he stated that,

"After a certain and not very advanced stage in the progress of agriculture, it is the law of production from the land, that in any given state of agricultural skill and knowledge, by increasing the labour,³ the produce is not increased in an equal degree, This general law of agricultural industry is the most important proposition in political economy. Were the law different nearly all the phenomena of the production and distribution of wealth would be other than they are".

The same thought was expressed by Davenport⁴ when he suggested that,

"Were it for example, always and without disadvantage possible to increase the labour investment upon any given piece of land, no land shortage could ever manifest itself, and rent must disappear".

He objected to applying the principle only to land and stated the principle to be that,

"Disadvantage attends any excess or defect in the supply of productive factors relatively one to another."

This latter statement of the principle is perhaps more realistic in the economic sense in that other factors do not remain constant and maximum returns are usually earned where the factors reach a certain balance, rather than each factor causing a constant decrease in returns, with other factors remaining constant.

This point was brought out by Henry C. Taylor⁵ in his statement that,

"The law of increasing and diminishing returns operates when increasing amounts of labour and equipment are associated with or applied to a given area of land. . . . At any given time and place there is a certain proportion in which the factors combine most profitably. If less or more than a certain amount of labour and equipment be associated with a given area, the profits will be less than they should be. The proportion which is right for one farm at a given time may be wrong for another. This may be due to differences in the physical and biological character of the land or to differences in location with respect to the market. Also, it is true that the adjustment of proportions which yield maximum profits on a given farm at one time may be wrong at another time on the same farm. This will result when there is a change in the relative costs of the factors of production, or in the price of the product. Changes in the relative abundance of the factors of production, resulting in changes in their relative cost to the producer, arise out of differences in the rates of increase of the supply of land, labour and equipment".

However, the law of diminishing returns itself needs some clarification before its operation can be properly understood. This point was stressed by S. W. Warren⁶ when indicating that,

¹ Illustrated by Manitoba Dairy Farms.

² Mill, John S. *Principles of Political Economy*. p. 109. New York, Longmans Green & Co. 1902.

³ Mill believed that capital was "accumulated labour", hence he really included both capital and labour in above statement.

⁴ Davenport, Herbert J. *Economics of Enterprise*. p. 418. New York, MacMillan. 1913.

⁵ Taylor, Henry C. *Agricultural Economics*. p. 150. New York, MacMillan. 1919.

⁶ *Lectures on Farm Management*—Cornell University, Spring Term, 1946.

"The law of diminishing returns has two aspects:

- (a) The Principle of Diminishing Increase
 - (b) The Principle of Diminishing Profits
- or (a) as increasing amounts of one factor of production are added to a fixed quantity of other factors the amount of product increases at a decreasing rate
- and (b) because of Diminishing Increases, a point will be reached at which the additional amounts of the variable factor will not pay".

These two aspects might for simplicity be termed the (a) physical and (b) the financial aspects of the law. Dr. Warren points out that failure to distinguish between the two frequently leads to erroneous conclusions.

The significance is that the limits of advantage from the standpoint of diminishing profits are usually reached before they would be indicated by the net dollar value of the diminishing physical increase alone. The reason is that it is almost impossible to increase yields per acre or per cow without adding something to costs in addition to the variable you intended to increase. For example an increase of grain fed to a dairy cow, which gives an increase of milk, would be almost certain to increase the total labour, equipment and marketing costs. It might even result in illness of the cows before the physical limits of advantage were reached. Thus the point of greatest financial advantage is frequently lower than the purely physical relations would indicate.

The farm operator is primarily concerned with the financial aspects of the law and its application to his farm business. Since the daily decisions made by farmers are only correct if they conform to the principles of diminishing returns it is desirable to know how closely those decisions do conform and what errors, if any, exist and how they might be avoided. Most of the examples of diminishing returns given in text books are examples of diminishing increase, that is the physical aspects of diminishing returns. That aspect is comparatively easy to measure and explain. Measuring and explaining the financial aspects of diminishing returns is not nearly as simple. While land can be defined and separated from the other economic factors, it is difficult to separate the effects of capital and labour. For example, if the land area and labour force are held constant, and then the effect of adding farm machinery measured, the results would be distorted because the normal purpose of adding farm machinery to the unit is to accomplish the work in mind with less labour or to handle more land or stock with the same labour.

In the study of farms stressing dairying in Manitoba⁷ the farms were sorted to determine whether any evidence existed that a point of diminishing profits had been reached. Since labour and capital are to some degree interchangeable it was felt that a measure including both should be used to indicate the effect of increased intensity of land use on the operators' earnings. One possible measure of the intensity of operation is the cash receipts obtained. This measures roughly the volume of business turnover on a given area of land. In order to limit the area of land the annual farm records from the Manitoba dairy study were first divided into three groups on the basis of acres of crop land per farm. The farms shipping wholemilk were placed in groups having less than 200 acres, 200 to 299 acres and 300 or more. (Table 1A). The farms shipping processed milk were placed in three groups having less than 190 acres, 190 to 299 acres and 300 or more. (Table 1B). Each of these size groups were again sorted into three or more groups with low, medium and high cash receipts.

⁷ An Economic Study of Dairy Farms in Manitoba from 1942 to the present, conducted jointly by the Provincial Department of Agriculture, the University of Manitoba and the Economics Division, Dominion Department of Agriculture.

These farms illustrated the principle of diminishing profits very well. The highest labour earnings were obtained on the farms which had close to, but not over, \$30.00 of cash receipts per acre. The point where profits began to diminish seemed to be in the groups with a little less than three man work units⁸ per acre. Where more than this amount of labour was applied the earnings of the operators decreased. Where less than this amount of labour was applied the

TABLE 1A. THE EFFECT OF INTENSITY OF OPERATION AS MEASURED BY CASH RECEIPTS FROM GIVEN ACREAGES. FARMS SHIPPING WHOLEMILK, 1942-45

Grouped by Cash Receipts per Farm	Number of Farms	Average Labour Earnings	Average Crop Acres	Cash Receipts per Crop Acre	Man Work Units per Acre	Man Work Units per Man	Crop Index	Live Stock Index
\$	No.	\$	Ac.	\$	M.W.U.s	M.W.U.s		
Less Than 200 Acres								
Less than \$3,000.....	35	602	113	21	2.9	186	111	94
\$3,000 to \$3,999.....	24	932	146	23	2.7	186	118	99
\$4,000 or more.....	38	784	151	43	3.6	194	117	110
200 to 299 Acres								
Less than \$5,000.....	19	741	251	15	2.0	206	91	104
\$5,000 to \$6,999.....	28	1,236	241	24	2.6	209	106	108
\$7,000 or more.....	36	1,191	254	36	3.2	219	118	110
300 or More Acres								
Less than \$6,000.....	29	—62	430	11	1.9	277	85	78
\$6,000 to \$7,999.....	28	1,498	428	16	1.8	227	98	100
\$8,000 to \$9,999.....	15	1,129	497	18	1.8	231	85	90
\$10,000 or more.....	35	3,034	582	26	2.2	271	100	110

TABLE 1B. THE EFFECT OF INTENSITY OF OPERATION AS MEASURED BY CASH RECEIPTS FROM GIVEN ACREAGES. FARMS SHIPPING CREAM AND CHEESEMILK, 1942-45.

Grouped by Cash Receipts per Farm	Number of Farms	Average Labour Earnings	Average Crop Acres	Cash Receipts per Crop Acre	Man Work Units per Acre	Man Work Units per Man	Crop Index	Live Stock Index
\$	No.	\$	Ac.	\$	M.W.U.s	M.W.U.s		
Less than 190 Acres								
Less than \$3,000.....	32	69	117	16	2.8	174	105	91
\$3,000 to \$4,999.....	35	647	154	25	2.4	150	118	106
\$5,000 or more.....	7	—362	163	36	3.1	142	114	105
190 to 299 Acres								
Less than \$4,000.....	18	89	237	12	1.7	170	91	93
\$4,000 to \$5,999.....	25	996	260	18	1.9	202	102	98
\$6,000 or more.....	16	2,453	259	28	2.2	211	111	121
300 or More Acres								
Less than \$5,000.....	16	6	413	9	1.5	227	78	103
\$5,000 to \$6,999.....	24	1,188	382	16	1.9	219	104	102
\$7,000 or more.....	26	3,775	543	21	1.5	226	104	105

⁸ A Man Work Unit is the amount of work on income producing enterprises accomplished by an average man in a ten hour day. Because it is based on a measure used by all enterprises (namely labour) it can be used to get the size of the farm business in terms of acreage plus live stock weighted by labour required and this total can be divided by the number of men employed to get the output per worker on each farm.

relation between the application of labour and over-all intensity was irregular, probably due to the fact that labour is partially interchangeable with capital. However, when operators are tempted to carry the process of intensifying too far in order to increase the total earnings, they usually do so under conditions of financial stringency and hence are more likely to step up the labour used than the capital. Thus, man work units are related to over-all intensity at and beyond the point of diminishing profits.

The trend in the largest acreage group of wholemilk farms was distorted by fortuitous variation in the rates of production. (Table 1A). The farms with the largest crop acreages did not reach the point in cash receipts per acre (intensity) at which labour earnings began to decrease on the smaller farms. This is probably due to a tendency of operators on small acreages to endeavor to increase the total volume of business to a size that will support them more adequately by intensifying their operations. Operators of larger acreages are not under similar pressure to intensify. It would appear that many of the farms, particularly those with larger acreages, could profitably step up the intensity of their operations by adding more live stock or intensifying cultivation methods, but there are some farms with small acreages which have already carried the process too far and which would be better off to seek more acres rather than to continue intensifying their operations.

There is some objection to using the cash receipts as a measure of intensity because the rates of production (crop index and live stock index) and to a lesser extent labour efficiency are related to cash receipts per farm and tend to rise with cash receipts. However, some farms demonstrate that a point of diminishing profits was reached in spite of the association between high cash receipts and high rates of production. Therefore, the point of diminishing returns from intensification is probably reached more frequently than the tables would indicate, since the favourable influence on labour earnings of high rates of production would tend to offset the drop in earnings due to over-intensification.

The results indicated refer to farms with some dairying combined with crops. The question may be raised, whether the true point of diminishing returns has been indicated because:

1. The point would change with prices;
2. A change in type of enterprise would change the balance required between labour, capital and land, and the operator's solution might be to change the enterprises used rather than to increase the ones he has.

It must be remembered that the law of diminishing returns operates through the relations of physical inputs to physical outputs. The law of diminishing profits depends first on these physical relations and secondarily on price relations. The prices would not only have to rise or fall, they would have to change relatively to one another in order to change the best physical balance. Even if this changed relationship in prices occurs, the change in the point of diminishing profits would move much more slowly because each tendency to change would have to meet and overcome the increasing effect of the law of diminishing increase based on the physical relationships. Therefore, it is reasonable to expect that the limits of advantage would vary with price but within comparatively narrow limits.

A change to a more intensive type of enterprise might change the point of diminishing profits on a given crop acreage. An example would be a shift to poultry production with all feed purchased, or to vegetable crops production. However, these enterprises would need to operate efficiently in order to add to the operator's earnings. This might mean acquiring a whole new set of skills and a quantity of new capital. The great majority of operators who find themselves operating too intensively for their present type of farming, would find it easier and less risky to increase the acres of cropland operated.

Since the point of diminishing profits will shift with prices and changes in enterprises, it is not possible to lay down any fixed rules concerning the point of diminishing profits, but some indications of probable position can be noted. In the mixed type of farms studied in Manitoba, when there is over 300 acres of cropland on wholemilk farms or 190 acres on processed milk farms, the intensity of operation is likely to be too low rather than too high for the best operator's earnings.

On farms with less crop acres the intensity may be either too high, too low, or about right. If there are three man work units or more per crop acre the intensity is likely to be too high. Over \$30 of cash receipts per crop acre seemed to indicate too great intensity in the period studied. It may be possible to correct this figure by an index of farm prices for any other period of time. It should be noted that any return that was less than three-fourths of this amount was associated with less than optimum intensity. These figures should only be regarded as rough indicators and a case study of each individual farm would be needed for the best decision.

Farm records are essential to a thorough case study of the farm business. From these records the present earnings can be determined. Then budgets⁹ can be prepared for alternative plans of operation including different numbers of stock kept and different intensities of cultivation. If care is taken to correct the prevailing total costs to the level required by each alternative plant, it will be possible to determine which plan offers the best hope of a good return to the operator. Budget plans will help the operator to determine the extent of other difficulties in organization besides the effect of diminishing returns, but are especially valuable in this field.

AMERICAN FARM ECONOMIC ASSOCIATION

Agricultural policy at home and abroad was examined intensely by the American Farm Economic Association in its annual meeting at Philadelphia, Pa., on December 27 and 28, 1946. The two most important plenary sessions of the meeting were concerned with "International Trade and Food Policies" and "Current Legislation Affecting Farmers". The first subject was introduced in a paper by T. W. Schultz, of the University of Chicago, and was discussed by six experts. Schultz was mildly critical of the feasibility of the FAO program and called for an integration of the thinking on such questions as multilateral trade, full employment and production, raising of nutritional standards and commodity agreements. Schultz saw some incompatibility in many of the present proposals for the solution of the problem of post-war food shortages and surpluses.

The discussants, for the most part, were in agreement with Schultz' criticisms but had certain reservations. Not all were agreed that the major problem was a stable price level to American farmers and some pointed out that the work of ITO and the preparatory commission of FAO on the World Food Board proposal was the first step in integration.

Although the program was confined to two days instead of the usual three, a great many subjects were discussed. Among them were agricultural co-operation, dairy marketing research, agricultural statistics and the Research and Marketing Act of 1946. The Association's Committee on Parity reported on their assignment to redefine the concept and recommend an assured minimum share of the national income to farmers rather than parity prices.

Asher Hobson of the University of Wisconsin was elected president of the association after fifteen years as secretary-treasurer and was succeeded in this position by L. J. Norton of the University of Illinois.

⁹ Specially prepared forms to assist farmers in the preparation of a farm budget may be obtained without cost by writing to the Economics Division, Department of Agriculture, Ottawa.

SEASONAL VARIATION IN THE PRICE OF HOGS AND BACON

F. M. SCHRADER

The patterns of seasonal variation of hog prices and slaughterings and retail bacon prices during the war years differed from those of the pre-war period 1935-39. The seasonal variation of slaughterings increased slightly and that of prices was reduced during the period 1940-44 as compared with the five years immediately preceding the war. This article briefly outlines the major tendencies to changes in seasonal variations and the contributing factors. Retail bacon prices are included in the analysis because the effect of retail price control was reflected in the market price for hog carcasses.

Seasonal variations are the result of slaughterings varying from month to month with the bulk of the year's pig crop reaching the market during the fall and early winter months. This results from the wide-spread practice of raising one litter of pigs per sow per year. However, in many parts of Canada, notably in the Eastern provinces, two litters of pigs per year are raised. This results in substantial marketings during the spring months. The fall-farrowed pigs are marketed from March to May. There is then a sharp decline in marketings and slaughterings to a low point in July and August. The spring farrowed pigs reach market mainly during the last 4 months of the year. Hog prices are usually high when marketings are low and ordinarily reach the low point of the year at the peak of marketings in November.

The indexes¹ of seasonal variation, presented in charts (1-3), represent the average situation during the five pre-war years 1935-1939 and the five war years 1940-44 for Canada as a whole.

The pattern of seasonal variation of hog slaughterings and prices may vary, within limits, in different regions due to different types of farming and methods of production. In individual years the pattern, which is the seasonal movement, may be influenced to a great extent by such outside factors as increased demand in wartime. In addition, it may change over a period of years due to the influence of changes in methods of production and marketing. During the war years there were a number of new conditions influencing the patterns of seasonal variation. These include a strong increase in the effective demand for pork products, an increase in the hog population to almost double pre-war numbers, the establishment of export bacon prices which had the effect of floor prices and the establishment of wholesale and retail price ceilings.

Important changes occurred in the seasonal variation of inspected hog slaughterings in the 1940-44 period as compared with the 1935-39 period. During the war years there was a tendency towards an extension of the period of high spring marketings in April and May. This would indicate an increase in the practice of producing two litters of pigs per year. From a higher index in May slaughterings declined to lower point in August and then increased to a November index which was 7 points higher than in the pre-war period. Details of the seasonal variation during the two periods are shown in chart No. 1.

The price of hogs, of which the Toronto price of Grade B-1 hogs is representative, varied within narrow limits during the 1940-44 period. During periods which were free from control as in 1935-39 prices showed greater variation and rose from an index of 100 in May to an index of 111 in July. With the marketing of the spring pig crop, commencing in September, prices became adjusted to the larger supply and the index gradually dropped to 90 in November. By 1941 wholesale and retail price ceilings were established in Canada. Although direct ceilings were not placed on prices of livestock, the ceilings on meat were reflected in livestock prices. A general levelling off of seasonal variations was in evidence in the 1940-44 period. During this period April and May were the months of the lowest index. The high point was reached in

¹ The index of seasonal variation was computed by calculating each month's data as a percentage of the 12 month moving average, centred, for that month, averaging the five Januarys, Februarys, etc., and adjusting the 12 monthly indexes to equal 1200.

August and the decline through September and October to November was very slight. A graphic presentation of these seasonal price movements is given in Chart 2.

The cold storage operations of the Canadian Meat Board contributed to relatively higher hog prices in the autumn months and lower hog prices in the summer months during the 1940-44 period as compared with the 1935-39 period. Storage stocks are normally built up by the Meat Packing Industry during the period of heavy slaughter when prices are seasonally low and they are depleted during the summer months when slaughterings are light and prices are seasonally high. The cost of storage plus a safety margin is recovered from the sale of stored product in the season of relatively higher prices. The Meat Board followed this practice of storing during the months of high production to maintain exports of bacon during the summer months. In spite of the large storage programs during the war, the seasonal pattern of storage holdings changed very little. The Board held back only sufficient from their year round payments for bacon to cover the storage charges. In the autumn months of heavy production the Board price for bacon was higher than the Packing Industry would have normally received for their produce, but in the summer the Board price was lower. Thus the storage programs of the Meat Board contributed to the levelling out of prices during the period 1940-44.

Wholesale and retail price ceilings which were established in Canada in 1941 contributed to the reduction of seasonal variation of prices in the 1940-44 period (See Table 3). This was reflected in hog prices even though the latter prices were not directly controlled. Wholesale prices of bacon follow a seasonal pattern similar to that of hog prices. The lag of about one month results from the time required for curing and marketing bacon and the fact that wholesale prices include rigid processing, storing and marketing costs.

A preparatory committee of 19 nations, on which Canada was represented, met in London, England, during October and November, 1946, for the prime purpose of creating an International Trade Organization. While the necessary detailed work was not completed the general principles were laid. As it was found impracticable to complete the work at the first session it was decided to hold a second session on April 8, 1947, at Geneva.

The I.T.O. preparatory council in the first session set up a seven chapter charter as a working basis for the International Trade Organization. These chapters deal with purposes, membership and structure of the organization as well as employment provisions, general commercial policy, restrictive business practices and intergovernmental commodity arrangements.

The International Trade Organization will function as a unit of the Economic and Social Council of the United Nations. Its functions will be many. But the main functions will be:—

1. To improve the bases of international trade.
2. To obtain the economic and social objectives of the United Nations, in the restoration and maintenance of international peace and security.

According to the charter of the International Trade Organization, "The Committee stressed that commodity arrangements should provide, where practicable, for measures designed to expand world consumption. This is particularly desirable when the need for a commodity arrangement arises from the existence of a burdensome surplus or where increased consumption would result in an improvement in the general well being, as, for example, in higher standards of nutrition."

INDEXES OF SEASONAL VARIATIONS 1935-39, 1940-44

CHART 1.—PRICE B-1 HOGS (LIVE BASIS), TORONTO

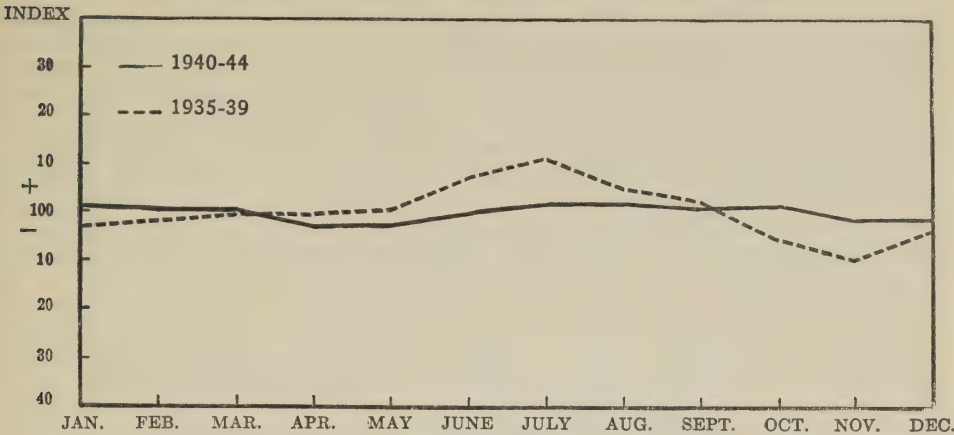


CHART 2.—HOG SLAUGHTERINGS, CANADA

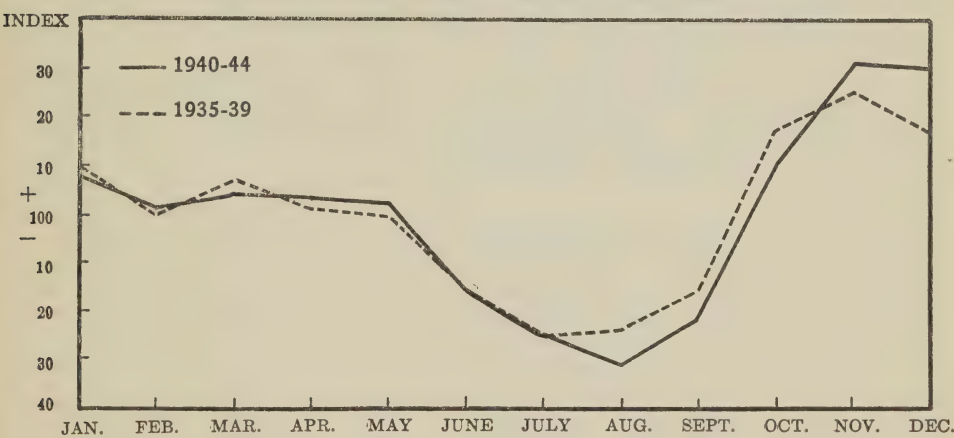
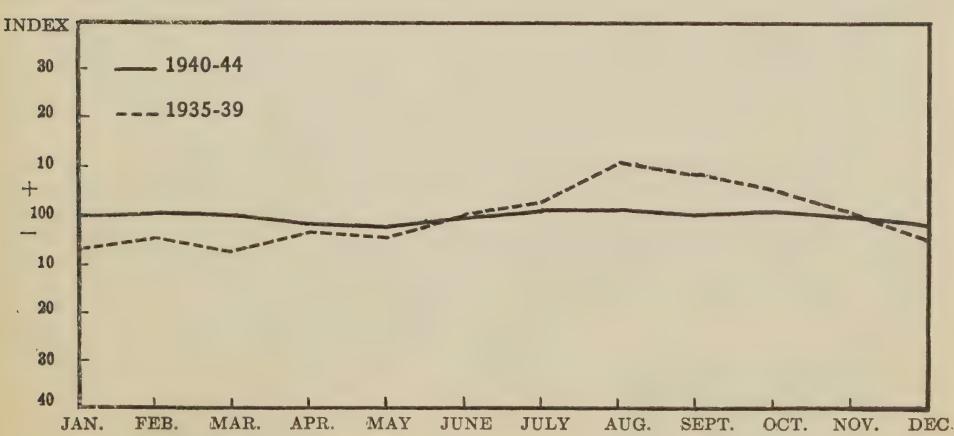


CHART 3.—WHOLESALE PRICE SMOKED No. 1 LIGHT BACON, TORONTO



FARM LABOUR: WARTIME POLICIES¹

FRANK SHEFRIN

One of the strategic questions that had to be dealt with in planning wartime agriculture was: How could the total manpower potential be used most effectively for producing a maximum of essential foods? The first task, of course, was to get the desired number of workers. The second was to distinguish between the year-round and seasonal labour force because entirely different policies are applicable. A new job for a year-round worker involves changing residence, moving the family and giving up the present home and community. Seasonal workers, in contrast, usually return to their homes after the crop season. The supply of year-round workers for the individual farm can be determined; the supply of seasonal workers is flexible within fairly wide limits. The third task was to get workers who were skilled to the place where work was to be performed.

It was necessary to develop numerous programs to accomplish the tasks of obtaining the requisite number of farm workers and welding them into an efficient productive force. Inventories had to be taken of the available supply of manpower and type of skills. Large numbers of new workers had to be recruited from the ranks of those who had hitherto not been a part of the regular labour force of the country. The maladjustments in the labour market which arose from workers' difficulties over locating jobs and employers' difficulties in locating workers had to be corrected. This article describes briefly the various steps taken to implement the various programs.

The shortage of farm labour was probably the major problem for farmers. It was most acute in the eastern provinces where dairy farming and livestock production dominate, in the vicinity of large eastern cities, and wherever industrial or war activities were concentrated.

At the beginning of the war, farm workers were accorded the same treatment as anyone else in regard to postponement of military training. The existence of a large surplus force of labour on farms during the first year of war provided the necessary manpower for the war industries, the armed forces and the farms. However, coincident with the steady drain of manpower and womanpower from Canadian farms, there was the greatly increased demand for food products. It was estimated that approximately 400,000 men and 100,000 women left the farms from the beginning of the war to March, 1942 for service in the armed forces or war industries. The great majority of these people left the farms before selective service was introduced on March 23, 1942, to stabilize manpower on farms. It became obvious after the first two years of war that the drain of essential manpower from the farms had to be checked if the increased requirements of food were to be met.

Two problems, in particular, had to be met. First, there was the need for a larger number of experienced year-round workers to meet the requirements for the increased livestock and dairy program. Second, plans had to be developed for supplying larger numbers of seasonal workers to meet harvest labour requirements.

As early as the spring of 1941, a degree of stabilization was achieved when Mobilization Boards were asked to grant postponements to farm workers if such postponements were considered necessary to maintain farm production. The introduction of the National Selective Service policy and regulations in March, 1942, included special provisions for stabilizing² the farm working force. Essential farm workers were prohibited from leaving agriculture except

¹ The author is indebted to G. V. Haythorne, of the Department of Labour, for his suggestions and comments.

² Stabilization of Employment in Agriculture.

P.C. 2251, March 21, 1942.

P.C. 7595, August 26, 1942.

P.C. 246, January 19, 1943.

P.C. 1355, March 4, 1944.

under certain conditions. The agricultural manpower policy initiated in 1942-43 may be summarized as follows:

1. The stabilization of the farm working force was promoted through (a) requiring all workers to remain in agriculture unless they received permission from National Selective Service Officers to secure employment elsewhere, and (b) granting postponements of military training to farm workers whose services were essential to agriculture.

2. More effective use of manpower in agriculture was achieved through (a) organized movements of farm workers, who could be spared temporarily, from one province to help in another province (b) movement of men from less to more productive farms (c) encouragement of greater exchange or co-operative use of local labour and machinery, and (d) introduction of labour-saving devices.

3. The regular farm working force was supplemented through securing the services of non-farm residents. These workers included students, men and women from towns and cities, service personnel, conscientious objectors, Canadian Japanese, Indians, and prisoners of war.

4. Co-operative arrangements were worked out with the United States farm manpower officials for a mutual exchange of combine harvest outfits in Western Canada, and of skilled tobacco and potato workers in Eastern Canada.

5. Extensive campaigns, especially during the fall and winter months, were organized to encourage farm workers to accept employment in other essential industries, while, at the same time, the labour needs of agriculture were safeguarded as much as possible.

This stabilization policy kept in agriculture thousands of essential experienced workers who would otherwise have left the farms. Managers of government Employment and Selective Service offices were repeatedly advised of the importance of this feature of National Selective Service and were instructed that it be rigidly enforced.

More Effective Use of Existing Farm Manpower.—The more effective use of farm labour was made possible through: first, the reallocation of hired farm labourers from areas where supply was adequate to deficit areas; second, to some extent through the reallocation of farm labourers from less productive to more productive farms; and third, greater mobility of farm labourers by the provision of free and assisted transportation.

To determine the need and the degree of production efficiency, a measurement factor was worked out. The productivity of the farm was measured in two ways—by the type of product, and by the scale of operations. The Associate Director of the National Selective Service stated in a talk in May, 1944 that:

"A classification of farm products on the basis of their relative importance in the war effort has been prepared by the federal Departments of Agriculture and Labour, with the concurrence of the Wartime Prices and Trade Board. Broadly speaking, this labour priority classification reflects the greater importance of livestock and livestock products in comparison with field crops, vegetables and fruits."³

The remainder of this article will deal in more detail with some of the farm labour mobilization programs.

Dominion-Provincial Farm Labour Agreements.⁴—The Dominion Government recognized its responsibility for national adjustments needed in the

³ Haythorne, G. V. Agricultural manpower. The Canadian Journal of Economics and Political Science, 9 no. 3: 366. August, 1943.

⁴ Dominion-Provincial Farm Labour Agreements:

P.C. 27/3191, May 6, 1941.

P.C. 46/9150, October 7, 1942.

P.C. 3620, May 4, 1943.

P.C. 28/7420, September 22, 1943.

P.C. 3492, May 12, 1944.

P.C. 3869, May 31, 1944.

location and kind of farm labour supplies during wartime. It, therefore, made an offer to assist all provinces financially in recruiting, transporting, and placing workers on farms. The basis for close co-operation with the provinces was provided through annual Dominion-Provincial Farm Labour Agreements. These agreements which provided for an equal sharing of expenses, enabled united action in meeting farm labour requirements.

The agreements provided for united action by the Dominion and each province in the recruiting, transporting and placing of farm workers, together with measures designed to utilize the existing labour in agriculture to the best advantage. In each province, a Dominion-Provincial committee on farm labour was established. On this committee, in most provinces, was a provincial minister who signed the agreement, his deputy minister, other provincial officials and regional and local officials of the Employment Service. These committees decided the kind of farm labour recruiting and placement program that was to be operated. The detailed administration of the program was the responsibility of an official of the province appointed for this purpose. In all provinces these men are called the directors of the Dominion-Provincial farm labour programs.

"Written into these agreements and implicit in the whole farm labour program is a strong emphasis on local responsibility in dealing with farm labour problems. Persons familiar with local conditions, it is thought, are in a better position than anyone else to encourage the fullest use of labour now on farms and to ensure that outside labour brought into the area is placed on farms most deserving it... Most of these local committees, it should be added, are dealing with the whole farm production program, but since labour is a vital part, most of their activity is devoted to manpower."⁵

Local committees were organized in every province by the provincial Department of Agriculture field men. The committees' functions were: to stimulate agricultural production; to provide for the most effective use of local labour and equipment, and to recruit men for other essential work when they are not needed on the farms. In some provinces, these committees gave valuable assistance in supplying information as to the essentiality of the farming operations of farm workers applying for postponement of military training, or desiring permits for work in other industries.

Mobility of Farm Labour.—The policy of paying transportation under the Dominion-Provincial Labour Agreements greatly increased the mobility of farm labour, thereby facilitating the movement of workers to shortage areas and insuring a more effective use of available manpower.⁶

Large scale excursions of farm workers were organized. These are briefly listed below:

Alberta and Saskatchewan girls to British Columbia;

Movement of Saskatchewan farm workers to Ontario;

Eastern harvesters to the Prairie Provinces;

Transfer of harvesting equipment;

Exchange of harvesting equipment between the Prairie Provinces and the Mid-Western States;

Exchange of farm labour between Canada and the United States;

Sugar bush workers for Maine.

Maintenance of Farm Labour Force.—A series of programs was worked out designed to keep farm workers on the land, and to make use of available servicemen, conscientious objectors, prisoners of war and volunteer help of

⁵ Haythorne, G. V. Agricultural manpower. *The Canadian Journal of Economics and Political Science*, 9 no. 3: 366. August, 1943.

⁶ Transportation Assistance.

P.C. 27/9591, October 21, 1942.

P.C. 44/10933, December 2, 1942.

city and town people. In addition, vocational training in agriculture was provided for those willing to work on farms.

Postponements of military training.⁷—The Mobilization Regulations included a special provision for granting postponements to farmers and farm workers making application. According to this provision, Mobilization Boards were required to grant postponement *until further notice* to farmers making application unless the Boards were satisfied that those in question were not essential to agriculture.

Rejected and discharged men.—Considerable attention was given to the direction of men rejected by the army to essential industries, particularly agriculture. Arrangements were made in the summer of 1943 with the Department of National Defence for stationing Selective Service officials at army reception centres to refer rejected and discharged men to essential employment. In the fall of 1943, the National Selective Service introduced the compulsory direction to specific employment of recruits who had been called for compulsory military service but who, because of some physical condition, were not required to report for military training.⁸

In order to obtain a more effective direction of these workers, discharged men and others who had no overseas service, to more productive farms, Selective Service Regulations were amended to add agriculture to the list of industries to which men from 16 to 65 years of age could be directed. Enforcement procedures were simplified.

Conscientious objectors.—The Regulations governing the distribution of conscientious objectors who had been postponed as such by the Mobilization Boards, were changed.⁹ Prior to this Order, conscientious objectors were directed to Alternative Service Camps. The new Order provided authority for Alternative Service Officers to direct these postponed conscientious objectors to employment where their services could be utilized to the best advantage in the national interest.

Because of the shortage of farm labour and because the great majority of these men were from farms, agriculture was singled out in the Order as the industry which should logically have their services.

Evidence that this objective was kept in the forefront by the Alternative Service Officers was that 70 per cent were employed in agriculture in 1944. The Order provided that postponed conscientious objectors in agriculture should be put under contract with their employers. Farmers paid \$25 per month, plus board and lodging, and the difference between this and the going wage was paid to the Red Cross.

Prisoners of War.¹⁰—In the spring of 1943, a project was organized for the use of prisoners of war on sugar beet farms in the Lethbridge area. The men were transported daily from the camp to the various farms where they were employed. In the following years, prisoners of war were used in different regions.

Canadian Japanese.—The Canadian Japanese moved from the coastal areas of British Columbia were employed on sugar beet farms in Alberta, and Manitoba as well as on Ontario farms—the majority being in Alberta.

⁷ Postponement of Military Training of Essential Farm Workers.

P.C. 2252, March 21, 1942.

P.C. 10942, December 1, 1942.

⁸ Use of Rejected and Discharged Men.

P.C. 7260, September 16, 1943.

⁹ Conscientious Objectors.

P.C. 2821, April, 1943.

¹⁰ Use of Prisoners of War:

P.C. 2326, May 10, 1943.

P.C. 5864, July 24, 1943.

P.C. 9743, December 24, 1943.

Help from the Armed Forces.¹¹—For men in the Army, the following arrangements were made:

(1) Compassionate farm leave—Leaves from the Army were first granted more extensively in the spring of 1943 to men who could be spared for work on their own farms or on those of immediate relatives, *when extreme hardship would result* if soldiers did not return. The number of leaves granted was limited to a certain percentage of unit strength and were given for periods up to six months and could be extended. The Department of Labour paid railway fares up to five hundred miles and provided a suit of overalls for each man securing leave. The payment of transportation and other assistance was discontinued in 1945.

(2) Farm Duty—The Farm Duty Plan, inaugurated in July 1943, was continued in effect in 1944 and 1945. Its purpose was to provide soldier labour under military direction during emergency farm labour shortages especially at harvesting.

The Department of Labour paid the interprovincial transportation for these soldiers and shared expenses with the province concerned for moving the men within the province. Work overalls were supplied jointly by the Department of Labour and the province in which the man was detailed to work.

Soldiers detailed were allocated to farms under the supervision of the Provincial Directors of Farm Labour, who were also responsible for the collection of soldiers' wages from the farmers. Losses were shared equally by the Dominion and the province concerned. Almost 100 per cent collection was achieved in 1944 in all provinces. Wage rates were established for the different regions in Canada.

These men were employed in varying numbers from July to November inclusive. They helped with haying, grain, potato, fruit and tobacco harvesting and, in some cases, with canning and dehydrating foods.

(3) Spring and harvest leave—the Canadian Army Routine Order 3456 which provided for Compassionate Leave and Farm Duty was amended in the spring of 1944 to allow certain classes of soldiers, who could be spared, to be granted up to a maximum of two months, spring and harvest leave to work on farms. This leave was for work on any farm where the soldier was needed.

Air Force personnel were permitted to take spring farm leave when they could be spared for a maximum period of two months to work on their own or their parents' farms. In July, 1944, the regulations were amended to permit personnel to take Harvest Leave on any farm where they were needed. Air Force men going on harvest leave were provided with free transportation and a pair of overalls if their leave was for a period of two weeks or more.

By special arrangement with the Department of National Defence (Navy) sailors were made available for harvesting in the Prairie Provinces during September.

Temporary help from students and townspeople.—Students and townspeople were asked to assist on farms during their holidays and spare time as a result of the shortage of farm labour and the need for increased production.

Besides assisting in organizing this labour under the Dominion-Provincial Farm Labour Program, the Department of Labour prepared national publicity to encourage greater numbers of these workers to help in agriculture.

Women temporarily employed.—A large number of girls from towns and cities helped in temporary jobs on farms during 1944. In New Brunswick and Nova Scotia they were employed at apple picking; in Ontario, camps were in operation under the terms of the Dominion-Provincial Farm Labour Agree-

¹¹ Service Personnel—Farm Duty.

P.C. 5931, July 24, 1943.

P.C. 6434, August 13, 1943.

P.C. 6797, September 13, 1943.

P.C. 9148, December 5, 1943.

ment to provide accommodation for girls employed on fruit and vegetable farms; and in British Columbia, women performed many types of farm work.

Treaty Indians.—Treaty Indians were encouraged in 1944 to take employment on farms. Indians from reserves in the northern part of Manitoba outside of the agricultural area were brought down to assist with harvesting.

Training.¹²—Agricultural youth training plans were developed on a co-operative basis between the Federal Department of Labour and most of the provinces. Courses were given in farm mechanics, soils, and the use of fertilizers. These courses were under the Youth Training Program, and costs were borne jointly by the Department of Labour and the provinces concerned. Other courses in agricultural work were financed under the War Emergency Training Program, where the costs were borne by the Department of Labour. In Saskatchewan, a number of Secondary School boys from towns and cities were given elementary training during the past summer in agriculture on individual farms. During the training period, which usually lasted for four weeks, the boys were paid \$3 per week in Saskatchewan by their farmer employers. In addition to this, they received \$3 per week under the War Emergency Training Program. After this initial period, the farmers paid the regular wages. Courses in buttermaking and cheesemaking were also given.

On the whole, farmers adhered well to the National Selective Service regulations. Reports from the local offices of the National Selective Service indicated that relatively few farmers were unwilling to accept decisions concerning their employment, either on farms or in other industries. As evidence of the readiness of farmers to accept manpower controls, records show that out of 2,650 actions commenced in respect of contravention of National Selective Service Civilian Regulations, less than 30 involved farm workers (September 1, 1942 to November 1, 1945.)¹³

The willingness of farm people to abide by wartime regulations is also indicated by the results of a questionnaire sent out on postponement from military service in the spring of 1945 to a 10 per cent sample of over 16,000 farm workers in all parts of Canada.¹³ Replies received from more than 90 per cent of this group showed that only about one per cent of the total had left agriculture. It should be noted further, that in practically all these cases permission had been granted to work in closely related industries, such as cheese factories, creameries, feed mills, blacksmith shops and garages.

Canada's farm labour was part of the total problem of marshalling all the country's resources for the building of a powerful fighting force, and the production of a maximum of war materials and food. Mobilizing manpower meant the virtual elimination of unemployment, and the recruiting of additional persons (married women, high school and university students) into the labour force. It involved shifting workers from established places and occupations to the armed forces and to war industries, and the control of the movement of manpower, both by preventing labour from leaving preferred occupations, and by encouraging the movement of seasonal labour to areas where it was needed. This was the job of National Selective Service, directed by policies evolved through Dominion-Provincial co-operation. Mobilizing manpower also meant the fuller use of available human resources through longer hours and greater efficiency.

¹² P.C. 3868, May 10, 1943.—War Emergency Training Program.

¹³ MacNamara, A. *Manpower in agriculture*. Talk given at the Dominion-Provincial Agricultural Production Conference held at Ottawa, December 3-5, p. 2. (Mimeo). Ottawa. 1945.

LONG TERM FOOD CONTRACTS: CANADA-UNITED KINGDOM¹

Long term contracts between Canada and the United Kingdom first began in November, 1939. The first contract was for cheese, the second for bacon. By the time that World War II ended there were contracts for bacon and other pork products, beef, lamb and mutton, cheese, evaporated milk, eggs, an assortment of fruits and vegetables, and for such non-food products as fibre flax and vegetable and forage crop seeds. Prior to 1944, agreements for food shipments were for a one-year period. After 1944 contracts were for two or more years.

The contacts were drawn up between the Governments of the United Kingdom and Canada. In these contracts, minimum or maximum amounts to be taken, the price to be paid, the period of delivery, and the quality were stated.

These wartime contracts have been extended into the post-war period. There are long term contracts for bacon and pork products, beef, mutton and lamb, wheat, cheese, evaporated milk and eggs, and for the non-food item, flax fibre. The following tables summarize the terms of the contracts.

CANADA-UNITED KINGDOM FOOD-EXPORT AGREEMENTS, 1945-46 TO 1949-50 PRODUCT AND TERMS OF AGREEMENTS

BACON			
Period covered.....	1-1-46 12-31-46	1-1-47 12-31-47	1-1-48 12-31-48
Minimum quantity contracted for:			
Total.....million pounds	450.0	350.0	400.0 ^(a)
Percentage of Wiltshire sides specified:			
minimum per cent.....	75.0	75.0	
Price per 100 pounds A grade Wiltshires F.A.S. Canadian seaboard.....	22.50 ^(b)	25.00 ^(b)	(b)
Actual quantity shipped:			
Bacon and cuts.....million pounds	277.0 ^(c)		

(a) Contract negotiations completed for bacon and beef but not signed.

(b) \$22.50 up to April 1, 1946; \$25.00 up to January 13, 1947; \$27.00 up to September 1, 1947 and \$29.00 thereafter.

(c) Preliminary.

BEEF			
Period covered.....	1-1-46 12-31-46	1-1-47 12-31-47	1-1-48 12-31-48
Minimum quantity contracted for:			
Total.....million pounds	60.0	120.0	120.0 ^(a)
Price per 100 pounds medium quality steer carcasses			
Canadian dollars	20.75	21.10 ^(b)	
Actual quantity shipped—carcass weight.....million pounds	110.3 ^(c)		

(a) Contract negotiations completed for bacon and beef but not signed.

(b) Prices in Canadian funds per 100 lbs. frozen weight, bone-in, f.o.b. Canadian seaboard:

STEER AND HEIFER CARCASSES

 Choice quality (Red Brand).....\$24.25

 Good quality (Blue Brand).....23.25

 Medium quality.....21.10

(c) Preliminary.

MUTTON AND LAMB			
Period covered.....	7-1-45 12-31-46	1-1-47 12-31-47	1-1-48 12-31-48
Minimum quantity contracted for:			
Total.....million pounds	20.0	10.0	
Price per 100 pounds frozen weight f.o.b. Canadian seaboard			
Canadian dollars	(a)	(a)	
Actual quantity shipped.....million pounds	19.1 ^(b)		

(a) LAMB—purchased by the Meat Board in the period May 1-Aug. 31.....\$31.25

 purchased by the Meat Board in other periods.....27.50

MUTTON.....18.00

(b) Includes amount shipped to December 28, 1946 and additional bookings.

¹ Prepared by Frank Shefrin.

WHEAT				
Period covered.....	8-1-46 7-31-47	8-1-47 7-31-48	8-1-48 7-31-49	8-1-49 7-31-50
Minimum quantity contracted for:				
Total.....million bushels ^(a)	160.0	160.0	140.0	140.0
Portion of above total to be shipped as flour minimum—thous. long tons	500.0 ^(b)	400.0 ^(b)	300.0 ^(c)	300.0 ^(c)
Prices per bushel ^(d).....Canadian funds	\$ 1.55	\$ 1.55	(e)	(e)

(a) Bushel of 60 pounds avoirdupois.

(b) With an additional quantity not exceeding 140,000 tons to be determined by negotiations in the light of the out-turn of the crop.

(c) The actual tonnage to be negotiated by July 1, 1947 and July 1, 1948, respectively.

(d) Basis No. 1 Manitoba Northern in store Ft. William, Port Arthur, Vancouver or Churchill. Prices for other grades to be determined yearly.

(e) Wheat bought and sold in the crop year 1948-49, not less than \$1.25 bu.

Wheat bought and sold in the crop year 1949-50, not less than \$1.00 bu.

Actual prices to be paid for wheat bought and sold within the crop years 1948-49 and 1949-50 to be negotiated and settled not later than December 31, 1947 and 1948, respectively.

EGGS				
Period covered.....	1-1-46 12-13-46	2-1-47 1-31-48	2-1-48 1-31-49	
Total quantity contracted for.....1,000 dozen..	83,000	83,000	83,000	
Price per dozen, grade A large f.o.b. Montreal.....Canadian cents	37.80 (in shell) 35.50 (for drying)	^(a)	^(a)	

(a) Prices in Canadian funds per dozen, f.o.b. ocean steamer Atlantic seaboard:

Spring fresh eggs.....Grade A large—41 cents

Fall fresh eggs.....Grade A large—47.75 cents

Storage eggs.....Grade B large—47.75 cents

CHEESE				
Period covered.....	4-1-45 3-31-46	4-1-46 3-31-47	4-1-47 3-31-48	
Total quantity contracted for.....million pounds	125.0	125.0	125.0	
Prices per pound—1st grade.....Canadian cents	20.0 ^(a)	20.0 ^(a)	20.0 ^(a)	
Actual quantity shipped.....million pounds	126.7			

(a) f.o.b. factory shipping point or grading station shipping point.

EVAPORATED MILK				
Period covered.....	4-1-45 3-31-46	4-1-46 3-31-47	4-1-47 3-31-48	
Total quantity contracted for.....thousand cases ^(a)	300	600	600	
Price per case.....Canadian dollars	4.81 ^(b)	4.95 ^(b)	4.95 ^(b)	
Actual quantity shipped.....thousand cases	703.5			

(a) Each case contains 48-16 oz. tins.

(b) f.o.b. steamer or R.R. car Montreal, or ports Vancouver or New Westminster, or f.o.r. Montreal, Vancouver or New Westminster.

NOTES

The preparatory committee of the International Trade Organization agrees that "if a policy of high and stable employment is successful on a large scale, the fluctuations in primary production and consumption are likely to be reduced. On the other hand, the achievement of greater stability in real income of primary producers will in turn assist in the general maintenance of high and stable levels of employment".

The preparatory council of the I.T.O. in its charter recognizes that certain difficulties arise in the case of primary products (primary products include all mineral, agricultural products including food stuffs and forestry products.) These difficulties may warrant the adoption of intergovernmental commodity agreements regulating production, trade, and prices. Such arrangements would be consistent with certain objectives. These arrangements should aim to alleviate the difficulties when adjustments in production and consumption cannot be effected as rapidly as the circumstances require, by the free play of the market forces alone. Or they may aim to facilitate economic adjustments designed to promote the expansion of consumption. They may aim also to moderate pronounced fluctuations in price; to provide for increased production to meet serious shortages; and to maintain and develop the natural resources of the world and protect them from unnecessary exhaustion. But in no case should commodity arrangements be made until there has been a detailed study of the commodity in question.

Some of the purposes of the International Bank for Reconstruction and Development are:

- (i) To assist in the reconstruction and development of territories of members by facilitating the investment of capital for productive purposes, including the restoration of economies destroyed or disrupted by war, the reconversion of productive facilities to peacetime needs and the encouragement of the development of productive facilities and resources in less developed countries.
- (ii) To promote private foreign investment by means of guarantees or participations in loans and other investments made by private investors; and when private capital is not available on reasonable terms, to supplement private investment by providing, on suitable conditions, finance for productive purposes out of its own capital funds raised by it and its other resources.
- (iii) To promote the long-range balanced growth of international trade and the maintenance of equilibrium in balances of payments by encouraging international investment for the development of the productive resources of members, thereby assisting in raising productivity, the standard of living conditions of labour in their territories.

The International Bank may make or facilitate loans which satisfy the general conditions of Article III in any of the following ways:

- (i) By making or participating in direct loans out of its own funds corresponding to its unimpaired paid-up capital and surplus and, subject to Section 6 of this Article, to its reserves.
- (ii) By making or participating in direct loans out of funds raised in the market of a member, or otherwise borrowed by the Bank.
- (iii) By guaranteeing in whole or in part loans made by private investors through the usual investment channels.

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The ECONOMIC ANNALIST

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THE ECONOMIC SITUATION

The forecast of 1947 investment by Canadian business, made by the Dominion Department of Reconstruction and Supply, indicates that aggregate new capital expenditures amounting to \$1,739 million are planned by the business groups surveyed. This amount is 53 per cent above the corresponding outlay achieved during 1946. In its report, the Department says: "An investment program of this magnitude reflects not only the need for replacement, modernization and expansion of industry, but also a healthy optimism about economic development in the future, on the part of business enterprise."

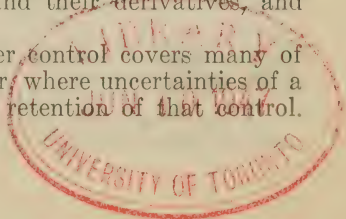
With respect to probable realization in 1947, another survey conducted by the Department of Reconstruction and Supply shows that producers of the principal basic and building materials expect, during 1947, to increase their aggregate production by amounts varying generally from 10 to 30 per cent over the 1946 levels. It seems probable that this increased domestic output will be supplemented by larger imports of some supplies customarily obtained from abroad. The report indicates, however, that it is unlikely that the available volume of supplies, though considerably improved over the previous year, will be sufficient physically to support an over-all increase of 53 per cent in the intended volume of business investment in 1947. Scarcity of labour skills, particularly in the construction industry, may constitute a further hindrance to the realization of the investment intentions. On the other hand, anticipated repair and maintenance expenditures which make competing demands for building materials and skilled labour appear to be little larger in 1947 than those made in 1946. Thus, most of the increase in the supply of building materials is likely to go into new investment. Taking account of all these factors, it still appears that in 1947, as in the previous year, business enterprises will find it difficult to realize fully their investment intentions as indicated by their early-year plans.

In summation, although some of the intentions may not be realized during 1947, it is, nevertheless, likely that the business investment program will involve an increased portion of the Canadian productive facilities and will contribute correspondingly to the maintenance of a high level of national income and employment.

Decontrol.—A substantial additional number of goods and services were released from price control on April 1, 1947. The Wartime Prices and Trade Board has amended its Order 684 in which the specific list of goods and services under price control is continued.

In the section dealing with foodstuffs, the release from ceilings includes candy and confectionery of all kinds, cocoa beans and their derivatives, and beverage preparations made from cocoa.

The list of goods and services which remain under control covers many of the basic necessities of life in food, clothing, and shelter, where uncertainties of a temporary character are still sufficient to require the retention of that control.



ANNUAL AND MONTHLY INDEX NUMBERS
WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES (a)

Year	Wholesale Prices 1935-39=100			Farm Prices of Agricultural Products 1935-39=100	Commodities and Services used by Farmers 1935-39=100		Cost of Living 1935-39=100	
	Farm Products	Field Products	Animal Products		Eight Factors	Eleven Factors	Farm Living Costs	Urban Living Costs
	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1913.....							79.6	79.1
1914.....							82.0	79.7
1915.....							86.3	80.7
1916.....							93.6	87.0
1917.....							111.6	102.4
1918.....							131.4	115.6
1919.....							143.0	126.5
1920.....							170.7	145.4
1921.....							139.5	129.9
1922.....					126.9	133.2	127.5	120.4
1923.....					118.7	128.7	127.9	120.7
1924.....					122.5	132.6	125.1	118.8
1925.....					124.3	131.8	123.6	119.8
1926.....	144.4	158.5	130.2		120.6	129.3	120.9	121.8
1927.....	138.6	149.4	127.8		120.9	130.1	119.5	119.9
1928.....	136.3	134.3	138.2		119.4	128.2	118.3	120.5
1929.....	140.8	137.2	144.4		118.4	127.5	117.4	121.7
1930.....	119.5	105.8	133.3		105.7	116.3	113.7	120.8
1931.....	78.9	65.0	92.7		91.8	100.8	103.7	109.1
1932.....	65.5	60.4	70.5		88.7	93.4	97.7	99.0
1933.....	69.3	69.3	69.2		88.4	90.0	95.7	94.4
1934.....	83.5	80.5	86.5		96.8	96.0	97.8	95.6
1935.....	89.2	84.4	94.1	88.0	95.6	96.0	97.9	96.2
1936.....	97.9	102.2	93.7	96.9	98.4	98.0	98.3	98.1
1937.....	117.4	128.9	106.0	119.7	108.5	105.4	102.9	101.2
1938.....	102.9	100.9	104.8	105.0	101.1	101.5	102.0	102.2
1939.....	92.6	83.7	101.5	91.8	96.1	99.1	99.5	101.5
1940.....	96.1	85.4	106.7	96.8	102.3	105.8	108.6	105.6
1941.....	106.6	88.9	124.4	110.2	108.2	114.2	114.2	111.7
1942.....	127.1	109.7	144.6	133.1	119.7	128.1	119.2	117.0
1943.....	145.4	129.0	161.8	157.8	122.4	136.0	121.7	118.4
1944.....	155.3	144.5	166.1	171.8	125.7	139.5	122.8	118.9
1945.....	160.3	150.4	170.2	176.6	125.5	142.6	123.2	119.5
1946.....	164.9	148.8	181.2	183.7	127.7	145.4	127.1	123.6
1946								
Jan.....	161.3	148.9	173.7	178.9	125.9	140.4	124.6	119.9
Feb.....	162.0	149.3	174.7	180.2				119.9
Mar.....	161.4	149.7	173.1	180.5				120.1
Apr.....	164.4	150.4	178.4	182.2	128.3	146.9	126.1	120.8
May.....	165.7	151.1	180.3	184.7				122.0
June.....	168.8	152.2	185.4	186.7				123.6
July.....	170.7	156.3	185.1	188.7				125.1
Aug.....	167.1	150.5	183.7	187.7	128.8	149.0	130.5	125.6
Sept.....	164.5	145.8	183.1	183.0				125.5
Oct.....	164.2	144.3	184.2	183.2				126.8
Nov.....	164.5	143.7	185.3	183.9				127.1
Dec.....	165.6	143.6	187.7	184.6				127.1
1947								
Jan.....	168.0	143.7	192.3	184.8	130.4	146.7	132.2	127.0
Feb.....	169.0	144.3	193.8	185.9				127.8
Mar.....	170.0	145.2	194.8	188.0				128.9

(a) All index data computed by Dominion Bureau of Statistics.

(b) Canada. Dominion Bureau of Statistics, Prices Branch. *Wholesale Price Index Numbers of Canadian Farm Products*. (Mimeo.) Ottawa, Feb. 1947. Wholesale prices of products of Canadian farms.

(c) Ibid (b). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid (b). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agricultural Division. *Index Numbers of Farm Prices of Agricultural Products*. (Mimeo.) Ottawa, Monthly.

(f) Canada. Dominion Bureau of Statistics, Prices Branch. *Price Index Numbers of Commodities and Services Used by Farmers*. (Mimeo.) Ottawa, Jan., Apr. and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binding twine, seed and hardware.

(g) Ibid (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) Ibid (f).

(i) Canada. Dominion Bureau of Statistics, Prices Branch. *Prices and Price Indexes, 1913-43*. Ottawa, 1945 and (Mimeo) Nov. 1946.

In some cases, subsidies are still being paid and some pricing adjustments may be found advisable as a stabilizing influence before the commodities concerned are entirely freed from control. Price control is being maintained on agricultural machinery and implements, and the Minister of Finance indicated retention of control until most of the products of the farm are released. Apart from this special class, however, the plan is to remove end products or fabricated commodities from the ceiling as their production reaches the point where a major shortage does not exist. But to ensure stability until markets find their levels after six years of control, it is felt wise to continue for a further period, controls on many of the basic materials. Rental and eviction controls are continued, but provisions have been made to allow for an upward adjustment in domestic and commercial rentals.

Meat rationing was ended at midnight March 26. It was felt the ration had accomplished the purpose for which it was set up and the step was taken in line with the general decontrol policy. Slaughter regulations remain in effect and so does price control over meat. Tuesday and Friday continue as meatless days in restaurants.

Cost of Living.—The Dominion Bureau of Statistics cost-of-living index continued upward from 127·8 on February 1 to 128·9 on March 1. The rise in this series since March, 1946, has amounted to 8·8 index points. Foods mounted from 147·0 for February to 148·7 for March, with meats, fruits and vegetables contributing a major part of the increase. Eggs showed the only appreciable decline. Changes in other group indexes were as follows: clothing advanced from 131·9 to 133·1; home furnishings and services from 130·9 to 133·6, and miscellaneous items from 115·5 to 116·0. Ten of the 12 sub-indexes forming the first two of these group series moved upward. Fuel and light remained at 109·1, and rentals at 113·4. The removal of controls from a substantial number of items and the allowance of upward revisions of rentals paid should result in an increase in the index.

Prices.—Prices received by Canadian farmers for agricultural products have been rising since October, 1946. The index number of prices received for all products on February 15, was 185·9, almost six points above the index number of 180·2 a year ago.

New minimum prices were declared for barley and oats, effective March 18, 1947. In the case of barley, the minimum prices are based on 90 cents a bushel for No. 1 feed in store Fort William/Port Arthur, in place of the former support price of 56 cents. The maximum price of barley was raised to 93 cents per bushel, Fort William/Port Arthur. In the case of oats, the new support price will be based on 61·5 cents a bushel for No. 1 feed at Fort William/Port Arthur, in place of the former support price of 40 cents. The new ceiling for oats is 65 cents a bushel. The ceiling prices correspond with the support prices for the highest grades of barley and oats. These support prices will remain in effect until July 31, 1948. The Canadian Wheat Board will stand ready to buy all oats and barley offered to it at the new support prices.

The price of flaxseed for the crop year ending July 31, 1948, has been set at \$5 per bushel, basis No. 1 Canadian Western in store Fort William. This compares with \$3.25 per bushel for the current crop year ending July 31, 1947.

Subsidies.—Because of the continuation of price ceilings on animal products, payments of 10 cents per bushel for oats and 25 cents per bushel for barley will be made until July 31, 1947 within the same conditions as the 25 cents payment on wheat purchased for feeding purposes. The feed freight assistance policy will be continued until July 31, 1948. Payment of subsidies on butterfat and milk for cheese was stopped on April 30, 1947.

REPORT OF THE FAO PREPARATORY COMMISSION ON WORLD FOOD PROPOSALS

S. C. HUDSON¹

Recommendations for far reaching national and international action to expand consumption and stabilize prices of food and other agricultural products are contained in the Report of the FAO Preparatory Commission on World Food Proposals issued in January at Washington. The Commission, which was established in accordance with the resolution of the Food and Agriculture Organization Conference held in Copenhagen, consisted of representatives of sixteen member countries, together with Siam.

The terms of reference of the Commission were to consider the Director-General's "Proposals for a World Food Board" and any alternative proposals which might be submitted to it and to prepare concrete recommendations and propositions for international action for achieving the following objectives:

- (a) To develop and organize production, distribution and utilization of basic foods to provide diets on a health standard for the people of all countries;
- (b) To stabilize agricultural prices at levels fair to producers and consumers alike.

The Report of the Preparatory Commission on World Food Proposals represents the latest development in the continuous effort by FAO during the past year to encourage governments to work out a long-range world food program and get it into operation.

World Food Board Proposals.—In response to a request to study the long-range problems of preventing both shortages and surpluses and to make recommendations for action, the Director-General of FAO presented a Report to the Copenhagen FAO Conference in September, 1946, called "Proposals for a World Food Board". The proposals called for an international agency with funds and authority to stabilize prices of basic agricultural commodities on the world market and to promote concrete measures on a world scale for the orderly development and expansion of agriculture. The functions of the proposed World Food Board would be:

1. To stabilize prices of agricultural commodities on the world markets, including provision of the necessary funds for stabilizing operations.
2. To establish a world food reserve adequate for any emergency that might arise through failure of crops in any part of the world.
3. To provide funds for financing the disposal of surplus agricultural products on special terms to countries where the need for them is most urgent.
4. To co-operate with organizations concerned with international credits for industrial and agricultural development, and with trade and commodity policy, in order that their common ends might be more quickly and effectively achieved.

The objective of the operation of the World Food Board was to ensure that sufficient food is produced and distributed to bring the consumption of all peoples up to a health standard. The basic problem in this connection was considered to be a financial one of increasing the purchasing power of the people who are unable to obtain sufficient food for their needs. It was proposed that the Board should be able to divert unmarketable surpluses to these consumers and to arrange for financing the cost of selling at prices which the consumers might be able to afford.

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Commission Supports Food Board Objectives.—From the opening statements made by delegates of member countries on the Commission it was evident that, while all were unanimous in their support of the objectives underlying the World Food Board proposals, namely, the improvement of world nutrition and the stabilization of commodity prices, all were not in sympathy with the methods suggested by Sir John Boyd Orr to attain these objectives. The suggestion for the creation of an international autonomous agency with funds and authority was rejected and support was given to the proposal for the use of intergovernmental commodity agreements within the framework of the proposed charter of the International Trade Organization.

Following the introductory plenary sessions the Commission established two committees. The terms of reference of these committees were as follows:

Committee I should, having regard to the studies proposed by FAO, deal with the problems arising out of the development and co-ordination of national nutrition and agricultural programs and with the international machinery which might be required to give assistance in connection therewith;

Committee II should consider the problems of the stabilization of agricultural prices at levels fair to producers and consumers alike, of the acquisitions, utilization, and disposal of surpluses and the use of international agreements and other international machinery or action appropriate for these purposes.

Agricultural and Nutritional Programs.—The Report emphasized the necessity for the development of modernized agriculture in the undernourished countries of the world. Referring to the World Food Survey made by FAO in 1946, it shows that more than one-half the population of the world is normally malnourished and has a diet equivalent to less than 2,250 calories daily at a retail level. It also shows that even in the most favourably situated countries at least one-third of the population had, prior to the war, an inadequate diet. This was particularly true when judged on the basis of mineral and vitamin requirements.

In the more advanced countries it is found that the major problem is to improve the quality of food supply by increasing the proportion of protective foods in the diet and to achieve a better distribution so as to ensure that vulnerable groups in the population obtain the particular food which they need.

In the less developed countries the whole volume of the food supply must be substantially increased. This is especially true of the protective foods and also applies in most cases to the energy foods.

The World Food Survey further indicates that in order to reach intermediate nutritional targets with a calorie intake of some 2,600 calories per head daily by 1946, the food supply would need to be increased by 90 per cent above pre-war. Of this increase 55 per cent would be accounted for by the improvement in the diet, and 35 per cent by population growth. By 1950 the food supply would need to be 110 per cent above pre-war. The enormity of this production task may be appreciated when it is realized that if the total world export of food were to be made available to these countries it would only meet the objective part way. On this basis it is concluded that the solution must be found in increased production in those countries which are less developed.

In some of the less developed areas farming is still in the primitive stage and almost completely unmechanized. In many of the countries one farm family manages to produce only enough to feed itself and one-half another family, whereas in some advanced countries one farm family feeds itself and four other families at a comparatively high nutritional level. The output of food per man is ten times greater in the more advanced countries than in those which are less developed.

The FAO Preparatory Commission having this situation in mind, points out the need for agricultural research, education, rural development programs and industrialization if the people of less developed areas are to enjoy better standards of diet, health and living. The recommendations of the Commission include the early formulation of development programs, the establishment of scientific, technical and other necessary administrative machinery and the making of contacts with some of the more advanced agricultural countries.

While FAO has a responsibility for assisting governments in the improvement of agriculture and nutrition and the welfare of rural people, the Commission points out the necessity of individual countries taking steps to help themselves and making use of the services of FAO.

Industrialization and General Economic Development.—The Commission reports that the desired expansion in agricultural production can be achieved only with a parallel expansion in industry, transportation, and other parts of the economic system. Such an industrial development would be necessary both to raise the purchasing power of the nonagricultural population and to absorb surplus farm population into productive occupations. Governments, particularly those of the less industrially developed countries, are urged to take all practicable steps to promote industrialization, with emphasis on decentralized development wherever possible.

While the carrying out of development programs in agriculture and industry would require financing on a large scale, the Report suggests that before the establishment of any new international financial facilities is considered, existing institutions of the United Nations should be put to the test. It recommends that FAO work closely with the International Bank to facilitate financing of needed development and that the heads of the two organizations should keep the situation under constant review and report to member governments and the Economic and Social Council if justified development programs are held up for lack of proper financing.

Price Stabilization and Commodity Policy.—Ample evidence was produced by the Commission to indicate the seriousness of price instability and its devastating effect on farmers. Agricultural prices are peculiarly sensitive because demand is comparatively inelastic for a large number of farm products and supply tends to be inelastic in the face of falling prices. During a period of price recession prices received by farmers tend to fall much more sharply than the prices of things which they buy. This situation has in the past given rise to the assumption that the only way to secure reasonable prices for agricultural producers is by restriction of production. The Commission rejects this proposition and concludes that the greatest hope for orderly expansion of production and consumption lies in intergovernmental consultation leading to intergovernmental commodity agreements or arrangements. While the Report points out that for any long period agricultural prices can be stabilized at levels fair to producers and consumers only if employment and purchasing power are maintained at a high level throughout the world, it notes the need for the elimination of short-term fluctuations in agricultural prices. The Commission recommends that all commodity agreements should have three objectives; greater price stability, an expansion of consumption and an improvement of nutritional levels, and a shift of production to areas where commodities can be produced more economically and efficiently.

While the Commission recognized the fact that price stabilization measures will differ from commodity to commodity, an attempt is made to present the more important techniques which might be employed in commodity agreements. These include stocks, quotas, long-term contracts and rules governing non-participants.

It is proposed that working stocks should be held by each nation to cover its own requirements. Beyond this it is recommended that in the case of essential foodstuffs a famine reserve should be created. Such reserve would be held nationally for use internationally on agreed terms. For certain commodities, where the problem is mainly seasonal and cyclical price fluctuations, the creation of price stabilization reserves or buffer stocks is recommended. Such stocks would be held nationally and administered under internationally agreed rules. This device would be used against short-term fluctuations with the holder buying when the prices reach the floor and selling when they reach the price agreed upon.

For some commodities quotas may be employed as the basic device of the agreement. Quotas may apply to exports or imports but in all cases should be flexible and must not interfere with normal trade channels more than is necessary and must be non-discriminatory.

While long-term contracts first emerged on a significant scale during the war there is an increased tendency to continue their use. An important aim of long-term contracts is to extend into the international field, assured markets for producers similar to those which they enjoy domestically within many countries. The chief dangers to avoid are discriminatory and prejudicial effects on countries which are not parties to the contracts.

In the past some international commodity agreements have been weakened by the non-participation of certain consumer or producer groups. Voluntary membership based upon mutual advantage should be the keynote of all commodity arrangements. Both for importers or exporters the principle must be equitable advantages in return for equitable obligations.

Sales to Needy Countries.—An important recommendation of the Commission provides for special price sales of certain commodities for the improvement of nutrition. In this connection the Commission was seeking an answer to the problem of marrying the potential production of certain countries of high output with the need in certain countries where a large section of the population suffers chronically from malnutrition. The sales would be made only to countries not able to import all the food they need at regular prices, and then only if the importing countries had programs for supplementing the diet of needy groups, and also well-defined plans for eventual agricultural and general development. With these and other safeguards for exporting countries and those which import wholly at commercial prices, the Commission feels that the special price sales would be an alternative to restriction, and a useful if limited contribution to nutrition in the less developed countries. The cost of financing such sales would be borne by the exporting countries concerned.

Annual Program Review.—It was recommended by the Commission that an Annual Program Review should be an integral part of each regular session of the FAO Conference, starting in 1947. Member governments of FAO would submit reports on the situation and outlook for production, trade, and consumption in connection with important agricultural commodities and on their nutritional and agricultural policies and programs. The Review would be participated in by voting representatives of governments and nonvoting representatives of other United Nations agencies, as well as by representatives of commodity councils and study groups.

The strength of the annual discussions would lie in the fact that they were carried on by responsible representatives of member governments. "The Commission is convinced," the Report states, "that governments would find such consultations extremely valuable and in the light of what emerged, many of them might find it mutually advantageous to reconsider, and in some respects adjust, their future programs."

The World Food Council.—In order to provide for continuous intergovernmental consultation between FAO Conferences, the Commission recommended the creation of a World Food Council. The duties of the World Food Council would be to keep under constant review and co-ordinate agricultural and nutritional programs and commodity operations and to advise member governments, commodity councils, and other agricultural commodity authorities, and specialized international organizations on such matters. In addition to initiating intergovernmental studies looking toward action in critical situations, the Food Council also would be empowered to advise on emergency measures too urgent to await action by the full FAO Conference and to request the Director-General to transmit its recommendations for action by member nations. The Report recommends that the World Food Council consist of voting representatives of eighteen member nations, nonvoting representatives from other United Nations agencies, and observers from FAO member countries without seats on the council.

No better appraisal of the Report can be made than that by Sir John Boyd Orr, Director-General of FAO, when in an address broadcast from Washington to the Eleventh Annual Meeting of the Canadian Federation of Agriculture, he stated, "This Report does not go the full length of recommending a World Food Board with authority and funds of its own. It does, however, recommend closer consultation among governments, including the setting up of a World Food Council. The Commission's report puts the responsibility upon the individual nations, but the World Food Council would provide the machinery whereby the nations can act together to bring about an orderly development of agriculture to produce the food that the people of the world need, to stabilize prices in the world market at levels fair to producers and consumers, and to build up reserves of food against any drought or disaster which threatens famine".

USE OF POWER MACHINERY IN BUSH LAND IMPROVEMENT IN NORTH-EASTERN SASKATCHEWAN

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Clearing and improving land in north-eastern Saskatchewan presents an obstacle which must be overcome before the land can become agriculturally productive. The grey wooded and degraded black virgin soil of north-eastern Saskatchewan is characterized by a growth of tree cover which is a barrier to the agricultural development of the land. To remove this barrier, land improvement methods are being revolutionized, with slow, laborious hand methods yielding to fast and powerful land clearing machinery. However, the advantages of immediate availability of cropland with its income potentiality must be weighed against the large initial outlay of capital necessitated by the high cost of power machinery. This modernization of land clearing suggests changes in farm organization and also suggests new techniques to meet the problems of farm finance and also points to new difficulties in so far as farmers are confronted with inadequate credit facilities.

The pioneer area studies of 1941-42 indicated that a minimum of approximately 60 acres of cropland was needed, before the farm was on a paying basis. Since these studies showed an average rate of clearing and breaking of 4.5 to 9.0 acres annually, they suggest a need for rapid, power clearing methods.

To obtain more information, the Economics Division, Dominion Department of Agriculture has undertaken a study with a view to determining costs to farmers of clearing and piling by power machinery, actual operating costs, and general information on clearing practices. The data were obtained from operators.

Area.—The 1946 survey included areas in the vicinity of Melfort, Tisdale, Nipawin, Carrot River, Quill Lake and Invermay. Generally, the more northerly part of the area is characterized by a heavier bush cover than the southern areas. Twenty-five records were obtained in this area. Nearly all of the information applies to 1946 operations.

Equipment.—

Tractors.—Large, diesel, crawler-type tractors, up to 132 horse-power, provide the power for the clearing and piling operations.

Cutters.—The cutter consists of a V-shaped shearing blade mounted on a heavy steel frame. The width of the cutter varies from 8 to 15 feet.

Pilers.—The piler consists of a solid steel breastwork with teeth or prongs that protrude about 10-12 inches below the solid plate. The teeth project forward from 3 to 16 inches and assist in carrying the brush into the pile. The teeth are from 1 to 2½ feet apart and allow dirt to pass through.

Bulldozers.—The bulldozer is simply a heavy solid steel breastwork which is used only for pushing.

Each of these attachments requires a certain degree of flexibility in its attachment to the tractor. The simplest type of attachment is a hinge whereby the cutter slides along the ground on shoes and is held down by gravity. The cable lift is operated mechanically and is powered by the tractor. The hydraulic lift is the other main type of attachment.

Other Equipment.—A considerable number of accessories is required for a complete outfit. Some method is required to blow dirt, leaves and flowers out of the radiator. This is done with compressed air or water pressure. Blades require sharpening, at least once a day. The frequency of sharpening depends on the size and kinds of bush and the number of stones. Grinders are generally mounted on flexible shafts for the purpose of sharpening blades. Compressors and grinders are powered by small stationary engines or by electricity generated by accompanying mobile electric light plants. These plants also supply lights for the bunk house and around the machines for general repair work. Frame break-ages are common in heavy work. Some operators, rather than rely on the already fully taxed facilities of local garages, carry their own arc welding outfit with them. Sleeping quarters for the crew are usually provided by the operator, and consist of a bunk house accommodating 4 to 6 people. Most outfits carry a 500 gallon fuel tank with them to allow the settling of the diesel fuel oil and lessen the danger of sludge being mixed with the fuel. Rubber-mounted trailers are often used for moving the piler and the cutter. A trailer is used to carry tools, fuel and grease. A car or truck is considered a necessity with each outfit. A fairly wide range of tools is also required to meet the varying needs. This extra equipment represents a considerable investment, though all outfits do not have all of these accessories.

Operational Methods and Costs.—

Bush Clearing.—Bush cutters are able to operate for a relatively long season. Operations are generally halted during the coldest winter months of December, January, February and March, although cutters can and sometimes do work during the entire winter season. The break-up period halts all operations because the ground is too soft for the heavy outfits. The average season for scrub cutting is 6-7 months. In some small areas farmers will not have their scrub cut except when the leaves are on the trees. Their reason is that the sap is distributed throughout the trunk, branches and leaves of the tree at that time of the year and the roots will decompose much more quickly.

After the scrub is piled there is still burning, breaking, root picking and the working down of the land to prepare it for seeding. The root picking is the only major manual operation of the process of land clearing. One farmer has devised a mechanical root picker or rake. The picker consists of heavy teeth in a frame which juts downward into the soil. The frame is mounted on a Ford tractor so that the picker is hydraulically controlled. Roots are then raked into windrows where they can be burned or carried away.

Rates of Clearing and Piling.—Some difficulty arose in arriving at comparative rates of doing work because of the variability in types of cover and the difficulty of arriving at definite standards of the types and densities of cover. Tree cover was described as light, medium and heavy.

Table 1 shows the average rates of clearing and piling. The numbers in parenthesis following the acres per hour refer to the number of estimates.

The piling operation is somewhat slower than clearing. Clearing is simply a forward movement with the cutter. Piling involves backing up as much as half of the time with a resultant slower rate of doing work.

Custom Charges and Costs per Acre to the Settler.—Custom charges were almost exclusively on an hourly basis for both clearing and piling. In two cases operators gave the option of an hourly charge or a contract price per acre. The hourly charge ranged from \$8 to \$16 an hour with many from \$12 to \$15 an hour, and the average hourly charge \$11.75. On this basis the average cost per acre to the settler could be determined.

As suggested in Table 1, the costs of piling are higher and are about \$1.60 to \$2.50 an acre more than clearing. There was not a great deal of difference in costs between the sizes of outfit, although the larger outfits might be a little cheaper. This difference is subject to the reliability and comparability of the different rates of clearing given by the different operators.

In addition to these direct cash costs, the farmer must also, in nearly all cases, provide board for the crew.

The clearing and piling operations are seen to be a large expense. Often it is of such proportion that it cannot be financed by the farmer.

Operating Costs.—Information was also obtained on the costs of operation of the machines. These included expenditures for fuel, oil, labour and repairs. Fuel, oil and labour expenses were easily calculated on the per hour basis. Repairs, however, were given as a lump sum for the year. Repairs were calculated on a per hour basis by first determining the number of hours from the total acres cleared and piled during the season, and the average rates of operation.

Interest charges may be calculated on two bases, each of which may be justified under certain conditions. The first represents what might be an alternative investment, that is, the return which could be expected from sound investments. A rate of 3 per cent would be an adequate figure on this basis. The second is the rate which would have to be paid on borrowed capital. A rate of 6 per cent could be justified under these conditions. Both these interest charges are shown for investment charges. These are charged on half of the investment, based on the assumption that equipment was at half-way lifetime use.

The calculation of an adequate depreciation charge presents some difficulties. Most of the tractors are used during the winter months on some other type of work such as logging. Depreciation charges must be allotted on the basis of proportional use in the scrub cutting enterprise. Professor E. A. Hardy, head of the Agricultural Engineering Department, University of Saskatchewan, estimates the lifetime of tractors in this type of work to be 15,000 hours. The yearly depreciation charge was then determined on the basis of the number of hours of use in scrub cutting. The hourly depreciation was calculated by dividing the new value by the lifetime of the tractor in hours. A straight 10 per cent was taken as the depreciation charge on equipment other than the tractor. A certain charge must be allowed for starting gas and grease. While information in this regard was limited, the charges shown for this item were believed to be fairly adequate. The various items of expense are shown in Table 3.

In addition to these operating costs, interest and depreciation charges form part of the total cost. These are shown in Table 4.

The total cost per hour for outfits with tractors of 60 horse-power and over averaged \$5.14 allowing a 3 per cent investment charge, and \$5.32 with an

TABLE 1. AVERAGE RATES OF CLEARING AND PILING IN ACRES PER HOUR
BUSH LAND IMPROVEMENT SURVEY, 1946

Density of Cover	Clearing		Piling	
	Horse Power Rating		Horse Power Rating	
	60 and Over	Under 60	60 and Over	Under 60
	Acres per Hr.	Acres per Hr.	Acres per Hr.	Acres per Hr.
Light.....	3.1 (11) ^(a)	2.3 (3)	2.2 (6)	2.5 (5)
Medium.....	2.2 (14)	1.2 (10)	1.5 (7)	1.2 (5)
Heavy.....	1.2 (12)	1.5 (3)	1.0 (6)	1.4 (2)

(a) Number of estimates.

TABLE 2. AVERAGE COST PER ACRE OF CLEARING AND PILING ACCORDING
TO SIZE OF TRACTOR, BUSH LAND IMPROVEMENT SURVEY, 1946

Size of Tractor	No. of Machines	Light Cover			Medium Cover			Heavy Cover		
		Clearing	Piling	Total	Clearing	Piling	Total	Clearing	Piling	Total
		\$ per acre			\$ per acre			\$ per acre		
60 h.p. and over.....	15	4.26	5.94	10.20	5.72	8.00	13.72	11.02	13.50	24.52
Under 60 h.p....	13	4.37	5.84	10.21	6.41	8.94	15.35	11.33	12.50	23.83
All Sizes.....	28	4.31	5.92	10.23	6.05	8.51	14.56	11.16	13.00	24.16

allowance of 6 per cent as an investment charge. Average costs per hour for outfits with a tractor less than 60 horse-power rating were \$4.09 allowing a 3 per cent investment charge and \$4.30 with a 6 per cent investment charge. Thus there is an average differential of about \$1 per hour in the cost of operating the two size ranges of outfits.

The cost analysis above must be qualified by certain limitations. All of the costs are calculated on an hour-basis. The number of hours used for the calculations was only the number of hours paid for by the farmer. This total would not include moves and short stops when a certain amount of expense was incurred. This would have the effect of showing fuel, oil, and tractor depreciation expenses too low. The deviation would not be very great, however, unless a large proportion of the time was spent in moving. The exclusion of moving time would make no difference on the validity of the labour costs, since in most cases labour was paid only for the same time as the farmer was charged.

The repair item includes repairs for the full calendar year. These are charged solely to the scrub cutting enterprise. Many of the tractors are used for logging during part of the winter season, and part of the tractor repairs should be charged to that enterprise. Lack of complete information on the relative time spent in each enterprise imposed difficulties in allocating the proportional repair expenses.

Similarly, tools and some equipment, such as lighting plant and air compressor, may be used in some of the other enterprises. Part of their upkeep costs should correctly be charged to those enterprises. Again, lack of complete data makes the proportional allocation of these charges difficult and they are charged completely to the land improvement enterprise.

Income of Custom Outfit Operators.—The average hourly charge for cutting and piling was \$13 for outfits with tractors with 60 horse-power and over, and \$9 for outfits with tractors less than 60 horse-power. For the larger tractors the net profit, allowing a 3 per cent investment charge, was \$7.86

per hour, and with a 6 per cent investment rate the net profit was \$7.68. For the outfits with tractors under 60 horse-power, the net profit, after allowing for a 3 and 6 per cent investment charge, was \$4.91 and \$4.70 per hour, respectively. The gross returns per outfit ranged from \$1,800 to \$21,670 a year.

Comments on Bush Land Clearing by Custom Operators.—

Basis of Charge.—The hourly basis of charge was believed more satisfactory by nearly all of the operators. However, the point was raised that the hourly basis of charge allowed a high degree of inefficiency. Time was not always clocked accurately. The hourly basis of charge allowed old, dilapidated and slow machines to operate under the guise of an apparently efficient outfit. The supporters of the contract basis of charge claimed that more standardized rates could be set which would allow a better analysis of comparative costs of various outfits.

Satisfaction and Possibilities of Custom Land Improvement.—Operators were generally of the opinion that there were great possibilities for the development of custom land improvement in north-eastern Saskatchewan. Power machinery has completely replaced the old hand method of land clearing. Any future land clearing development is certain to be made with power machinery. Some operators were of the opinion that the opening up of new lands would continue for only a few years, after which time there would be little work left in the area. Coupled with this idea was the opinion that large clearing

TABLE 3. AVERAGE OPERATING COST PER HOUR FOR CLEARING AND PILING OUTFITS ACCORDING TO HORSE POWER RATING OF TRACTOR, BUSH LAND IMPROVEMENT SURVEY, 1946

Item	Horse Power Rating of Tractor			
	60 and over	No. Estimates	Under 60	No. Estimates
	\$ per hour		\$ per hour	
Fuel.....	0.71	(15)	0.39	(15)
Oil.....	0.07	(15)	0.08	(15)
Labour.....	2.03	(15)	1.77	(15)
Repairs.....	0.99	(13)	0.77	(11)
Misc.: Starting gas, grease, etc.....	0.30		0.25	
Total Operating Cost.....	4.10		3.26	

TABLE 4. AVERAGE INVESTMENT, INTEREST AND DEPRECIATION CHARGES FOR CLEARING AND PILING OUTFITS ACCORDING TO HORSE POWER RATING OF TRACTOR, BUSH LAND IMPROVEMENT SURVEY, 1946

—	No. of Records	Investment	Depreciation Charges per hour	Interest Charges per hour at		Interest and Depreciation per hour	
				3%	6%	Int. 3%	Int. 6%
		\$	\$	\$	\$	\$	\$
Tractor, 60 h.p. and over...	15	7,506	0.50	0.12	0.24	0.62	0.74
Other Equipment.....	15	3,556	0.36	0.06	0.12	0.42	0.48
Total.....		11,062	0.86	0.18	0.36	1.04	1.22
Tractor, under 60 h.p.....	15	4,908	0.33	0.13	0.26	0.46	0.59
Other Equipment.....	15	2,941	0.29	0.08	0.16	0.37	0.45
Total.....		7,859	0.62	0.21	0.42	0.83	1.04

outfits were becoming very numerous and that all arable land would soon become cleared. Others were of the opinion that development of land improvement by power machinery was dependent on the general prosperity of agriculture.

Obstacles to Development.—The difficulty of obtaining repairs and skilled labour was a major obstacle in the development of custom land improvement. Another major problem is the difficulty of farmers in financing such an undertaking. Recent legislation, which provides protection to the homestead quarter against foreclosure, prevents farmers from being able to supply adequate security for the extension of credit. Some operators believed that the improvement of land was an asset worthy of the establishment of a credit policy adequate to finance such an undertaking.

In this regard, the program of the Saskatchewan Department of Municipal Affairs in supplying credit is worthy of note. Realizing the importance of an adequate cultivated acreage in order to guarantee the settler a reasonable return from his farm, and the inability of many settlers to finance a land improvement program, the Department established a credit policy designed to assist in meeting these needs. The Department makes a maximum loan of \$240 available to settlers for clearing and breaking, with a maximum of \$100 to be used in clearing and the remainder for breaking. This service is supplied to needy settlers who have under cultivation less than 70 acres. It is provided at the rate of \$5 per acre for clearing and \$7 per acre for breaking. This service can be used to bring the cultivated acreage up to 70 acres. The Department realizes, in view of present charges, that the loan allowed is not enough to cover the total costs of land improvement, but states that its policy is designed to assist the settlers. The loan is repaid by means of part crop payments. Interest is charged at the rate of 5 per cent.

Operators of land clearing outfits generally agreed in principle with this credit policy, but believed that it did not go far enough. The grant of \$100 for clearing does not allow the operator to work a full day on one farm. This necessitates frequent moving, which results in too high moving expenses and too much paying time lost. As a result, some operators do not bother stopping for such small jobs. Operators believed that the credit facilities available to the settlers should be enlarged so as to allow operators at least one full day on each farm.

The high degree of stoniness was a definite obstacle to the use of power machinery.

Summary and Conclusions.—Power equipment has done away with the extremely laborious task of hand methods of land clearing. This equipment has provided settlers with the possibility of placing their farm unit on a paying basis within a relatively short length of time. Areas of low agricultural productivity can be brought into a self-sustaining area in a short period of time. The advent of such equipment has confronted the settler with the problem of obtaining adequate credit facilities to finance such undertakings. The steps taken by the Saskatchewan Department of Municipal Affairs has been a move in this direction. The relatively high level of agricultural prices has provided the needed incentive for extending the areas of productive agriculture. The high capital requirements of settlers for this type of development might be reduced when the competition of outfits becomes more keenly felt. Operating costs would indicate that such reduction might well take place and still leave operators on a reasonably sound financial basis.

A special survey conducted jointly by the field staffs of the Dominion Bureau of Statistics, Central Mortgage and Housing Corporation and lending institutions, reports a total of some 40,000 housing units under construction at December 31, 1946.

FARM MANAGEMENT STUDY OF PRINCE EDWARD ISLAND POTATO FARMS

P. J. GILHOOLY AND A. GOSSELIN

During the summer of 1946 a farm management study of Prince Edward Island potato farms was made by the Economics Division of the Marketing Service, Dominion Department of Agriculture. The Prince Edward Island Department of Agriculture co-operated in the field work. The purpose of this study was to secure information on potato farm practices on the Island, on income from potatoes, and the relation of the potato crop to other enterprises on the farms. A representative sample of potato farms was taken in each of the commercial production areas of the Province. Records were taken only from farms having at least four acres in potatoes.

For analysis, the 180 farm records used were divided into four groups according to acreage in potatoes. There were 26 farms with less than 6 acres, 86 with 6 to 10 acres, 38 with 11 to 15 acres and 30 with more than 15 acres in potatoes.

Farm practices followed on the Island for growing potatoes are standardized as to crop rotations, spray material used, commercial fertilizers applied and potato varieties grown. The five and six year crop rotation is the most commonly used: potatoes after hay or pasture manured in the previous summer and fall ploughed, followed by a grain crop with grass seed, two years in hay and one or two years in pasture. Very few of the potato growers visited made use of green manure crops. Most growers applied one ton of commercial fertilizer per acre, a substantial number from 1,500 to 2,000 pounds per acre and a few used more than one ton. The most common fertilizer formula used is the 4-8-10¹. The potato varieties grown were Irish Cobblers, Green Mountains, Katahdins and Sebagoes.

There were 136 potato growers who produced certified seed only, 33 table stock only, and 11 produced both certified seed and table stock.

The data collected were for the crop year 1945-46. The 1945 potato crop on the Island, was the lowest, with the exception of the 1941 crop, during the ten year period 1936-45. The price of potatoes in 1945 was the highest for the same ten year period and returns to farmers compared favourably with other years when production had been higher.

Land Utilization.—Table 1 gives the utilization of land for the 180 farms and the 1941 census figures. In the study, records were taken only from farms having at least four acres in potatoes and this resulted in the average acreage for potatoes per farm being higher than the census figure. The average size of farm was higher as no records were taken from small farm holdings of 50 acres or less. There was a slightly higher percentage of improved land in field crops for the farms studied than is the case for all farms on the Island.

Farm Capital.—The average value of farm buildings was \$3,347 and of land \$3,010, making a total real estate value of \$6,357. The average value² of livestock per farm was \$1,988, of farm equipment \$1,991 and of feed and supplies \$35. The total farm capital averaged \$10,381 per farm on the 180 farms.

Farm Revenue.—The total farm revenue averaged \$4,068 per farm, of which 53.0 per cent came from the sales of crops and amounted to \$2,159 per farm. Of this, 50.3 per cent came from potatoes. The sales of livestock and livestock products plus the net increase in the livestock inventory amounted to \$1,764 per farm and accounted for 43.4 per cent of the average farm revenue.

The increase in inventory for feed and supplies averaged \$9 per farm and accounted for only 0.3 per cent of the total farm revenue. Miscellaneous farm revenue, which included work off the farms, trucking and sales of lumber and wood amounted to \$136 per farm and accounted for 3.3 per cent of the farm revenue.

¹ 4 per cent of nitrogen; 8 per cent of available phosphoric acid; 10 per cent of potash.

² Year end values.

TABLE 1. UTILIZATION OF LAND PER FARM IN PRINCE EDWARD ISLAND FROM CENSUS 1941* AND FROM SURVEY 1945-1946

	Census 1941 12,230 farms	Survey 1945-1946 180 farms
	acres per farm	acres per farm
Total farm area.....	95.6	142.8
Improved land.....	60.3	90.8
Field crops.....	38.4	66.1
Grain and hay.....	33.1	53.1
Potatoes.....	3.3	11.0
Other field crops.....	2.0	2.0
Pasture.....	19.4	24.3
Other—gardens, etc.....	2.5	0.4
Unimproved land.....	35.3	52.0

* Census of Canada, Prince Edward Island, 1941.

Total Expenses.—Total farm expenses averaged \$3,081 per farm. Livestock purchases totalled \$156 and cash operating expenses \$2,138. Of the cash expenses the highest items were paid labour \$486, fertilizer \$410, feed and concentrates \$395 which accounted for 22.7 per cent, 19.2 per cent and 18.5 per cent respectively of the cash expenses. The value of unpaid labour averaged \$428 and the net depreciation on buildings and equipment \$359.

Farm Income and Operator's Labour Income.—The difference between total farm revenue and total farm expenses gives the farm income which averaged \$987 per farm. The operator's labour income³ averaged \$571. Of the 180 farm operators 59 had a minus labour income; 73 had a labour income ranging from one dollar to \$1,000; 32 from \$1,000 to \$2,000 and 16 from \$2,000 to \$6,000.

TABLE 2. PRINCE EDWARD ISLAND POTATO FARM STUDY
SUMMARY OF FARM BUSINESS
180 FARMS, 1945-1946

	Average per farm	
	\$	\$
Revenue:		
Cash receipts.....	3,957.72	
Net inventory increase ^(a)	110.25	
Total farm revenue.....		4,067.97
Expenses:		
Cash operating expenses.....	2,138.46	
Livestock purchased.....	155.78	
Unpaid labour.....	427.98	
Depreciation.....	359.05	
Total farm expenses.....		3,081.27
Farm income.....		986.70
Interest on capital (4%).....		415.23
Operator's labour income.....		571.47
Value of farm produce.....	408.49	
Credit for use of dwelling.....	173.24	586.73
Operator's labour earnings.....		1,158.20

(a) Increase in livestock, and feed and supply inventories.

³ *Labour Income.*—The amount remaining after interest on the total farm investment (calculated at 4 per cent in this study) has been deducted from farm income, and represents the return to the operator for his labour and management.

The value of farm products used on the farm averaged \$409 and the use of dwelling was estimated at \$178 making a total value of \$587 for what is usually called farm perquisites.

Operator's Labour Earnings.—There were wide variations in the operator's labour earnings⁴ and the average for all farms was \$1,158. Twenty-three of the 180 farm operators had minus labour earnings and on the year's operations were in debt to an amount ranging from a few dollars to \$1,248. Sixty-four farmers had labour earnings ranging from one dollar to \$1,000; 59 from \$1,000 to \$2,000 and 34 from \$2,000 to \$6,596.

Efficiency Factors.—In order to compare the size of business of these farms and relate size to labour income, productive-man-work-units⁵ were used as this gives the size of business as measured by productive work done. When the farms were grouped on this basis labour income increased with size of farm business. The increase in income for each range of 100 productive-man-work-units in the middle grouping (from 400 to 699 P.M.W.U.) is not great. The difference in income between the smallest farms (under 400 P.M.W.U.) and the largest farms (over 700 P.M.W.U.) is quite marked and shows a difference of \$1,356 per farm.

The farms were also grouped on the basis of work done per man. This was done by dividing the total productive-man-work-units per farm by the number of men who worked on each farm for a twelve month period. This figure relates the productive work done by each man to labour income. With increased efficiency the labour income increased and ranged from a low of a loss of \$183 for farms with under 200 P.M.W.U. per man to a profit of \$1,370 for farms with over 350 P.M.W.U. per man.

Labour has been shown to be the highest single item of current expense chargeable to the farms. Where labour was not efficiently used in productive work a net loss was borne by the farms for the year's operations.

A comparison of farms on the basis of yields as measured by crop index⁶ was made. The labour income increased with increased yields per acre. High yields per acre increased the cash returns and at the same time reduced the cost per acre of cultivation of the crop, labour and fertilizer, and any other expenses chargeable to crops.

The relation of intensity, as measured by the amount of work done per acre of improved land to labour income was as follows: Increased time spent per acre of land resulted in increased labour income until a point was reached after which increased intensity did not pay and reflected wastage in use of labour by a decrease in labour income.

To further determine some of the factors influencing labour income, the farms were sorted on the basis of crop index as related to size of business. This sorting showed that regardless of size of business, the yield per acre was a direct influence and high yields resulted in higher labour incomes, and low yields, in each of the size groups, resulted in a net loss in labour income.

From these various measures of labour income by size of business, the figures obtained show that the optimum condition for obtaining high labour income are a moderately large business, maximum utilization of labour per man, maximum time spent per acre and high yields per acre.

⁴ *Operator's Labour Earnings.*—The amount the farmer receives after deducting all costs including interest and after taking into consideration the value of farm products used in the home and the value for the use of the farm home.

⁵ *Productive-Man-Work-Units.*—The total productive-man-work-units of a farm is the amount of directly productive work accomplished on that farm in a year. This is figured on a basis of the average amount of man labour required to take care of an acre of the various kinds of crops and the different kinds of live stock.

⁶ *Crop Index.*—The crop index in this study was based on yields per acre of the crops grown by individual farmers, compared with the average for all farmers in the study, and weighted by the productive-man-work-units required per acre by different crops.

MARKETING PRINCE EDWARD ISLAND AND NEW BRUNSWICK TABLE STOCK POTATOES IN EASTERN CANADA, 1945-46

W. C. WAY

During September, 1946, a potato marketing survey covering the 1945-46 marketing season was made in Prince Edward Island and New Brunswick by the Economics Division, Dominion Department of Agriculture. The objectives of the survey were to ascertain the methods, volume, prices and cost of movement of the potato crop from the two provinces. The survey extended to sales of both table stock and seed potatoes on the domestic and export markets.

This article briefly outlines the phases of purchasing and selling of table stock potatoes within the domestic market. The various costs in marketing from farmer to wholesaler were obtained from dealers' shipping records and personal interviews in Prince Edward Island and New Brunswick. For the purpose of illustrating the various items in the cost of marketing table stock potatoes from the farmer to the wholesaler, an itemized sample of the cost of marketing is given in Table 1.

The cost of moving table stock potatoes from the farm to the wholesaler in Montreal is about 58 cents per 75-pound bag. The items making up this amount are divided into three groups. The first group includes grading and bagging, local trucking, loading warehouse storage, bags, tags, twine and inspection service. These costs are incurred in preparing a carload for market. The

TABLE 1. COMPARATIVE COST OF MARKETING OF PRINCE EDWARD ISLAND AND NEW BRUNSWICK CANADA No. 1 TABLE STOCK POTATOES, 75 POUND UNIT, AT MONTREAL, DECEMBER 15, 1945, ON THE BASIS OF A 600-75 POUND BAG CARLOAD^(a)

Shipping Point	Charlottetown, P.E.I. \$ per 75 lbs.	Grand Falls, N.B. \$ per 75 lbs.
Purchase Price at Farm.....	1.116	1.139
Grading and Bagging.....	0.05	0.048
Local Trucking.....	0.04	0.045
Loading.....	0.02	0.02
Warehouse Storage ^(b)		
Bag, Tag and Twine.....	0.143	0.143
Inspection.....	0.007	0.007
Purchasing Costs.....	0.260	0.263
Freight rate.....	0.227	0.212
Refer.....	0.012	0.008
Heat.....	0.018	0.011
Other charges ^(c)		
Rail Transportation Costs.....	0.257	0.231
Brokerage.....	0.017	0.017
Margin.....	0.05	0.05
Selling Costs.....	0.067	0.067
Total Cost of Marketing.....	0.584	0.561
Delivered Price.....	1.700	1.700

(a) Cost of marketing a standard carload is obtained by multiplying each item by 600.

(b) Warehouse storage—may or may not be a cash expense.

(c) Other charges—may or may not occur.

second group, costs of railway freight, is only briefly mentioned. The third group includes brokerage and dealer's margin. The first and third groups are dealt with under the headings Purchasing and Selling.

Purchasing

The cost of assembling a carload of potatoes is about 26 cents per 75 pounds in both provinces.

The various potato buyers within the two provinces are classified as dealers, agents, loaders and grower-shippers. A dealer is an individual or organization who buys potatoes and delivers them to the various markets. An agent may be a dealer's fieldman who buys from the farmer and prepares carload lots for shipment to market. A grower-shipper is a farmer who markets mainly his own potatoes. A loader buys from the farmer, loads and sells the carload to a dealer.

Grading and Bagging.—In Prince Edward Island the purchase price is quoted to the farmer either on a 75-pound or bushel basis. Potatoes are usually bought graded and bagged in 75-pound units as few farmers sell ungraded potatoes. The farmers do the grading and bagging by hand or power-grader at the farm or warehouse. For these operations they are allowed about five cents a bag. In New Brunswick the purchase price is quoted on a graded 165-pound barrel basis. Most potatoes are graded and bagged by the agent. The potato bags are supplied to the farmer or agent on a debit-credit basis in both provinces.

Trucking.—Commercial truckers charge about 4 cents per 75-pound bag for an average distance of ten miles. Varying distances, marketing conditions and farmer-dealer relations determine trucking charges. When the farmer delivers his own produce, he receives about 3 cents per bag. In New Brunswick the agent generally operates from the dealer's warehouse rather than from the loading point. Potatoes are trucked ungraded and unmeasured in barrels at a charge of about 10 cents per barrel. Trucking is done by the farmer, commercial trucker, or the dealer. During the 1945-46 season, competition between loader-shippers and dealers was so keen that the dealer often did the trucking at his own expense.

Loading.—The Island agent receives two cents a bag for loading the potatoes and obtaining the bill of lading and inspection certificate. When trucking is included, he receives five cents.

The dealer often purchases a carload at loaded price. This method of local purchasing is common in Prince Edward Island. It tends to keep at a minimum the spread between the farm and loaded price. The loaded purchase price includes the farm price of potatoes plus the cost of grading and bagging, local trucking and loading.

In New Brunswick the agent is generally employed by the dealer on a salary or commission basis. He is supplied by the dealer with the necessary equipment to grade, bag and load the potatoes. The cost of these operations is about 15 cents per barrel. During the 1945-46 season, the New Brunswick shippers, successfully competed with the dealers.

Storage.—Potato growers usually sell part of their crop in the fall to pay crop-growing or harvesting loans. They store the remainder and sell it according to demand and their needs for cash. Where house-cellar and farm potato houses are used, storage is not a cash expense. Commercial storage space is limited and often retained for the dealer's use. Storage charges are 3 or 4 cents per 75-pound bag and are usually offset by the seasonal increase in price. When available in a warehouse grading and bagging facilities may be used by farmers at no extra cost. Both Prince Edward Island and New Brunswick have a limited number of government storage houses.

Bags.—Dealers buy bags by the thousand and supply the farmer or agent charging them an appropriate cost and giving credit for all bags used. Potatoes are usually marketed in new bags and the dealer recovers for bags lost or sold. Depending on competition, farmers or dealers pay for tags and twine. New bags, tags, twine and inspection service cost 15 cents per 75-pound bag.

Inspection.—The Dominion inspection service inspected and certified the grade of table stock potatoes at a cost of \$4 a carload at the time of this survey. This compulsory service ensures quality and grade to the buyer. Re-inspection at destination is a buyer's privilege.

Selling

Most table stock potatoes are sold at a delivered price although some sales are made on an f.o.b. basis. The dealers usually ship direct to the wholesaler and receive payment through a sight draft against bill of lading.

Brokerage.—During the 1945-46 season, nearly all sales were made through brokers. A brokerage of \$10 a carload was generally charged although higher brokerages were noted in some instances.

Dealer's Margin.—The dealer's or shipper's margin is the difference between the purchase price of potatoes plus the cost of marketing and the delivered price. No set figures could be obtained to estimate the office expenses for table stock potatoes. The dealers interviewed felt a five cent margin was necessary to cover expenses, risk and profit.

During the 1945-46 season the margin was often insufficient for dealers to realize a profit. Several reasons may be given for losses in many carload sales. The grower-shippers had lower operating costs and were able to offer more favourable prices to the farmer. The maximum prices for potatoes laid down by the Wartime Prices and Trade Board also curbed the profit¹. A third reason was that the control established by the Wartime Prices and Trade Board on table stock shipments beyond the Maritime Provinces affected the normal marketing costs from February to May, 1946².

Small and Cull Potatoes.—The sale of table stock potatoes on the Canadian market includes Canada No. 1 and No. 2, and during 1945-46, No. 1 Small. In Prince Edward Island culls are used on the farm or delivered to the starch factory. The choice depends on the quantity on hand and the distance from the factory. In New Brunswick since most potatoes are delivered for grading at the warehouse, and accumulated there, culls are sold for starch rather than returned to the farm. The factory price, less cost of handling and transportation to the factory, is paid.

Railway Freight Costs

Railway freight is the largest single item of cost in potato marketing. Within the Maritimes and east of Diamond, Quebec, class distance rates are charged. To destinations beyond, a series of commodity rates lower than distance rates is charged. The Maritime Freight Rates Act 1927, governs these rates keeping them at a comparatively low level.

The standard carload of table stock potatoes is six hundred 75-pound bags or 45,300 lbs. gross weight (one-half pound weight allowed for a bag). The total cost of rail transportation depends on the rate from station to destination, carload weight, and additional charges for refrigerator car, heating service and other railway charges.

Summary

The cost to the producer in Prince Edward Island and New Brunswick of marketing table stock potatoes in 1945-46 was about 33 cents per 75-pound bag, plus cost of freight. Of this amount the purchasing cost was about 26 cents. The farmer or agent might save 5 cents for grading and bagging, and 3 cents for local trucking. The latter might also receive 2 cents for loading. Cost of bags, tags, twine and inspection service amounted to about 15 cents. The selling cost totalled 7 cents per bag and included brokerage and margin. Brokerage cost about 2 cents. Dealer's or shipper's margin accounted for the difference.

¹ WPTB Order A1560, March 15, 1945.

² WPTB Order A1868, February 18, 1946 and revoked Order A1980, May 6, 1946.

SUBSIDIES PAID OUT BY THE DEPARTMENT OF AGRICULTURE^(a) 1946 CALENDAR YEAR

No.	—	Canada		P.E.I.		N.S.		N.B.		Quebec		Ontario		Manitoba		Sask.		Alberta		B.C.	
		\$		\$		\$		\$		\$		\$		\$		\$		\$		\$	
1	Fluid Milk.....	13,892,361		57,043		536,950		342,350		3,965,680		6,120,370		642,749		364,588		644,804		1,317,827	
2	Butterfat.....	21,654,006		318,396		739,587		566,401		6,414,754		5,608,764		2,137,912		2,934,931		2,533,618		399,643	
3	Concentrated Milk.....	2,148,370				24,435				574,389		1,379,944		4,052		6,422		59,393		99,735	
4	Milk—Cheddar Cheese.....	4,902,565		25,168		1,421		27,838		1,292,873		3,330,089		102,173		10,171		96,233		61,599	
5	Cheese—Bonus on Quality.....	1,256,680		1,238				5,742		259,808		969,207		5,726		564		8,353		6,042	
6	Cheese—Factory Improvement.....	187,667								158,634		27,155						852		1,026	
7	Hog Premiums.....	5,852,441		78,219		5,008		31,161		618,926		2,573,296		386,070		646,949		1,483,546		20,286	
8	Fertilizer Subventions.....	431,155		52,277		24,371		92,969		129,124		97,771								34,643	
	Bulk Purchase of Fertilizer and Fertilizer Chemicals.....																				
9	Lime Subsidy.....	17,730						6,538		9,659		1,533									
10	Feed Freight Assistance.....	420,260		40,025		69,888		83,118		174,744		46,277								6,288	
11	Feed Wheat Drawback.....	16,890,646 ^a		394,846		1,285,405		1,111,208		6,301,524		6,094,346								1,703,317	
12	Feed Assistance—Plan A.....	5,481,018 ^a		104,515		217,006		182,406		1,687,067		2,373,493								916,531	
13	Wheat Acreage Reduction.....	1,464,400 ^b																			
14	Prairie Farm Income.....	111,640												704		50,792		60,144			
15	Vegetable Canning Crops.....	324														214		110			
16	Berries for Jam.....	855,334		1,709		3,815		62cr.		137,597		635,287		3,221				9,394		64,373	
17	Wool.....	101,103								10,311		23,929								66,863	
18	Freight Assistance on Alfalfa Seed.....	144,185		964		4,488		467		1,075		36,824				34,965		58,999		6,003	
19	White and Yellow-eye Beans.....	38,614										38,614									
	White and Yellow-eye Beans.....	270,216										270,216									
	Total.....	72,220,715																			

^(a) Preliminary—subject to revision.^(b) Provincial breakdown not available.^(c) P.F.A. payments are not included.^(d) Rebates amounting to \$464,662 have not been deducted because no provincial breakdown was available.

SUBSIDY PAYMENTS MADE BY THE DOMINION DEPARTMENT OF AGRICULTURE¹

Subsidies and bonuses paid by the Dominion Department of Agriculture amounted to \$72.2 million for the calendar year 1946.

Subsidies on milk for fluid use and for butter, cheese and concentration purposes, on fruits for jam, dried beans and other vegetables for canning, and quality premiums on hogs and wool are direct payments to farmers. These payments are included in prices received by farmers which are used in estimating "cash income from the sale of farm products".

During 1946 several of these subsidies were reduced or discontinued. On and after October 1 no further claims for subsidy on milk for fluid use and concentration purposes were accepted. No subsidy was paid on the 1946 crops of fruits and vegetables for jam or canning or on white and yellow-eye beans. Quality premiums on hogs were reduced April 1 from \$3 for A and \$2 for B₁ carcasses to \$2 and \$1 respectively.

Other subsidies are paid on feeds, seeds, fertilizers and lime. Effective May 31, the Department of Agriculture assumed payment of the subsidy on fertilizer and bulk purchase of fertilizer chemicals formerly made by the Wartime Prices and Trade Board. This subsidy replaced the fertilizer transportation subvention paid by the Department of Agriculture and revoked in April, 1946. Wheat Acreage Reduction, and Prairie Farm Income programs are considered supplementary payments, which are still being made on claims entered prior to expiration of the policy.

MEAT BOARD EXPORT OPERATIONS, 1946²

Pork Products.—The 1946 Bacon Agreement with the United Kingdom called for 450 million pounds of Wiltshire sides and cuts. With decreased hog production for 1946, export shipments for the year were considerably lower than the previous year. Total bacon shipped under the 1946 contract amounted to 272.9 million pounds, valued at \$65.3 million. Quality, however, was maintained. Wiltshire sides constituted 84.8 per cent of the total bacon exported and approximately 54 per cent of the export bacon was in the top grade.

The minimum quantity of pork offals contracted for was 4,000 long tons, and the hog casing agreement was for 500,000 bundles. Shipments fell short of both these contracts as a result of the reduction in hog marketings.

Beef.—Shipments of beef in 1946 in line with production showed a decrease from the previous year. However, exports for the year of 119.2 million pounds of carcass beef more than filled the contract requirement of 60 million pounds. The 1947 agreement calls for 120 million pounds of beef.

In addition to beef, contracts were undertaken with the United Kingdom for 500,000 pounds of beef offals and 900,000 pounds of oxtails. Shipments against these agreements fell far short of completion.

Mutton and Lamb.—Under the agreement for mutton and lamb, the period covered extended from July 1, 1945, to December 31, 1946. The quantity contracted for during this period was 20 million pounds and actual shipments amounted to 19.7 million pounds, valued at nearly \$4 million. The contract for 1947 calls for 10 million pounds.

¹ Prepared by Marjorie Cameron.

² Prepared by Margaret M. Moore. For further reference see "Canadian Meat Board Exports, 1945" by F. M. Schrader, *Economic Annalist*, May 1946, and "Wartime Developments in the Canadian Live Stock and Meat Trade" by H. K. Leckie, *Economic Annalist*, November, 1945 and February, 1946.

MEAT BOARD EXPORT OPERATIONS^(a)

Product	1939-1943 Agree- ment ^(b)	1944-1945 Agree- ment ^(c)	1946 Agree- ment	Total
		(000 omit.)		
Bacon..... lb.	2,028,366	1,110,036	272,891	3,411,293
	\$ 395,362	246,247	65,305	706,914
Pork Offals..... lb.	37,486	22,524	5,102 ^(e)	65,112
	\$ 4,044	2,663	656	7,363
Lard..... lb.	4,412	8,973		13,385
	\$ 375	1,180		1,555
Canned Pork..... lb.	18,480	40,402		58,882
	\$ 5,155	11,517		16,672
Casings..... bdl.	1,214	1,510	317	3,041
	\$ 1,543	2,228	471	4,242
Oxtails..... lb.		808	304	1,112
		81	27	108
Beef—Boneless..... lb.		101,728	37,543 ^(f)	139,271
		22,950	9,497	32,447
Bone-In..... lb.		212,888	69,151	282,039
		42,292	14,130	56,422
Beef Kidneys..... lb.			133	133
			23	23
Beef Tongues..... lb.			269	269
			50	50
Mutton and Lamb..... lb.		1,153	19,718 ^(d)	20,871
		257	4,693	4,950
Other Canned Meat..... lb.		88,307	150,966	239,273
		19,352	29,740	49,092
Total Value..... \$	406,479	348,767	124,592	879,838

(a) All above figures are based on final statements prepared by Dept. of Agriculture Treasury.

(b) First bacon purchase October 31, 1939; last bacon purchase December 25, 1943.

(c) Covered calendar years 1944 and 1945. Beef and Bacon were under 2-year agreements.

(d) Contract ran from July 1, 1945 to December 31, 1946.

(e) Preliminary.

(f) In addition to beef shipped to U.K. there were 6,202,607 pounds of frozen beef shipped to the Netherlands. Value of this was \$1,292,703.72.

Between August, 1946 and January, 1947, there was a steady rise in the commodity groups of index numbers of commodities and services used by farmers, according to the Dominion Bureau of Statistics. The Dominion composite index of prices paid by farmers for commodities and services, inclusive of living costs, moved down 0.7 point between August, 1946 and January, 1947.

The Dominion index of farm family living costs rose 1.7 points between August, 1946 and January, 1947. The largest changes were recorded by health maintenance, fuel and food groups. All groups showed increases with the exception of clothing and household equipment which are calculated only in April and August, and remained nominally at fall 1946 levels. The Eastern regional index rose 1.3 points and the Western index 2.3 points. The greater increase in the West was caused by a more substantial increase in fuel and a slightly larger rise in food costs.

CANADIAN URBAN AND FARM FAMILY LIVING COST INDEX NUMBERS¹

The Dominion Bureau of Statistics publishes two series of living cost index numbers, one for farm families and another for urban families. The aim of these two series is the same, to measure the influence of changing prices upon the cost of a family budget over a considerable period of time. Both the farm and the urban budgets include only amounts of items which involve direct money expenditure.

Although these two series have the same basic aim, they are different in a number of important points because the living expenditure of typical farm families differs from that of urban families. Consequently, it is not surprising that the two records show different increases and decreases with the passage of time. Some of the more important differences in the two budgets are noted briefly in the following paragraphs:

Foods.—The farm food price index excludes potatoes, eggs, milk and bread. The first three of these are furnished mostly from the home farm, and it is assumed that the majority of farm families still make their own bread. All of these foods, of course, are important to both farm and urban families, but their influence upon the urban index is quite substantial, while in the case of the farm index it is negligible, due to the fact that budget quantities are based upon amounts of actual purchases. Tests have shown that if these four items be removed from the urban index, the farm and urban food series show approximately the same changes. However, it would be just as illogical to remove them from the urban index as it would be to include them in the farm index. The importance of flour in the farm index is much greater than in the urban series.

Fuel.—Domestic gas and electricity rates are extremely important in the urban index but do not appear in the farm budget which is used. As a result, the urban fuel index has risen less rapidly since 1939 than the farm fuel index, because electricity rates have declined during this period and gas rates have shown practically no change.

Rent.—The position of shelter costs in urban and farm living is quite different. The typical urban dweller is a tenant, and shelter costs in the urban index are represented by the movement of residential rentals. The great majority of Canadian farms are owner-occupied. For those that are rented, it is impossible to segregate the rent paid for the home. Likewise there is no adequate basis for distinguishing separate shelter costs of farm families included in such items as taxes, mortgage interest payments, home repairs and maintenance. All of these latter items are represented in the over-all index of prices for commodities and services used by farmers, but it has not been possible to make a reasonable division between the proportion required for farm living and farm operation.

Clothing and Homefurnishings.—Wool garments get a heavier weight in the farm clothing index than in the urban series. Conversely, rayon materials are more important relative to other basic fabrics in the urban index than in the farm index. Since 1939, woollens have risen considerably more than rayons.

An interesting test has been made involving the price series for 25 items of clothing and homefurnishings found in both the urban and farm series. In 13 cases the prices used in the farm index showed a greater percentage increase, and in 12 cases the urban percentage increases were greater. These figures do not suggest any evidence of price bias in the material used to compile the two series.

Miscellaneous Items.—Under this heading the urban index includes carfare, theatre admissions, and a number of other items not appearing in the farm series.

¹ Prepared for the *Economic Annalist* by H. F. Greenway, Director, Labour and Prices Statistics Division, Dominion Bureau of Statistics.

REVIEW OF LITERATURE

HURST W. H. *Layout and Operations of Co-operative Poultry Dressing Plants*. Washington, D.C., Farm Credit Administration, Co-operative Research and Service Division. Dec., 1946.¹

This Bulletin deals with the technical organization of thirteen farmers' co-operative poultry dressing plants in the United States. Main purpose of the report is to find the possibilities of making the process more efficient considering the scarcity and high price of feed as well as the high cost of labour, by a study of plants and equipment. The factors considered are of an engineering nature and deal with plant design and operations.

The author concludes that research has to be done in developing methods for removing feathers and improving chilling and packing in order to reduce the unit cost of labour. Many suggested plans of plants are appended to the Bulletin.

STANISLAW, Antoniewski. *O Stokach Rolniczych W Kanadzie or Agricultural Situation in Canada*. Pulawska Library's Economic Series No. 95. Warszawa, The National Scientific Institute for Rural Economy. 1946.²

This book is a welcome sign of the resumption of research in the field of agricultural economics in Poland. The Institute selected Canadian agriculture as the theme of its first postwar issue of a series of economic publications which had been interrupted in 1939.

The author gives a comprehensive view of agricultural conditions in Canada, based on his personal observations and supplemented by official records made available to him at the Fifth Conference of Agricultural Economists held at Macdonald College near Montreal in 1938.

Dr. Antoniewski divides his bulletin into ten chapters. In the first two he briefly pictures Canada in general, points to the role played by French-Canadians and emphasizes Canada's richness in natural resources. The greater part of this book is devoted to Canadian agriculture in its various aspects, such as land, land tenure, specialized farming, livestock production, cost of production, prices, and other farming problems.

Agricultural research and dissemination of information resulting from this research, the functions and the increasing role of the Dominion Department of Agriculture in economic matters, together with a brief history of the agrarian co-operative movement in Canada were also given considerable attention.

The concluding chapters deal with the inevitable immigration questions before the war interrelating them with Polish emigration into Canada. They also give a bird's-eye view of the Canadian agricultural situation during 1945 and part of 1946.

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¹ Reviewed by René Fortier.

² Reviewed by F. Lawrence.

The ECONOMIC ANNALIST

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THE ECONOMIC SITUATION

The index in wholesale prices in Canada continues to rise. It advanced from 122·9 in April to 125·3 in May. Substantial upward movements occurred in wood and wood product prices, animal products, non-metallic minerals and textiles, and smaller increases were recorded in vegetable product prices. Among the agricultural products, butter, canned milk, eggs, live stock, wool and wool cloth, rye, potatoes and onions moved at higher prices.

Farm Prices of Agricultural Products.—The Bureau of Statistics index of farm prices of agricultural products in Canada advanced two points in May when it rose to 192·3, the highest recorded. There was some variation in the indexes for the different provinces. Only in British Columbia was a slight decline registered, the index for that province receding from a high of 207·1 in April to 205·6 in May. Farm price index in Quebec was 206·7 which represented a sharp advance. The greatest rise occurred in Ontario where the index jumped from 191·9 to 195·2. Prince Edward Island also experienced a substantial increase to 192·3 which represented a rise of 2 points.

Prices of Commodities and Services.—The index of prices of commodities and services used by farmers (8 factors) advanced by a little more than 8 points between the first of the year and the spring. The index based upon eleven factors that is including tax rates, interest rates and wage rates, advanced from 146·7 to 156·8. The index of prices of items entering into rural costs of living also rose from 132·2 to 136·1.

Urban Costs of Living.—There was a general rise in urban costs of living as reported on June first when the index reached 134·9. This represented an advance of 7·9 points since the beginning of 1947 and a rise of 11·3 points in the twelve month period beginning June 1946. During May, the food index rose from 154·9 to 157·7. Higher prices for potatoes, butter, eggs and cabbage represented the increases while citrus fruit prices declined. The rentals index was higher by 2·4 points compared with May first. Fuel and light indexes were 9·5 points higher than a year ago. Indexes of clothing prices reflected a rise of 18·1 points in the year and home furnishings advanced 17·1 points in the twelve month period.

Retail Sales.—Dollar values of retail sales in May went up 11 per cent over the April index. This represents a rise of 14 per cent compared with the May 1946 index. During the first five months of the current year, retail sales were 10 per cent higher than the corresponding period of 1946. Radio and electrical stores continued to lead in dollar value sales showing a 23 per cent increase over May 1946. Food stores showed a 17 per cent rise and Department stores 19 per cent. While the increase in retail trade was general, it was highest in Ontario and Quebec and lowest in the Maritimes.

Crop Conditions.—Unseasonable weather in April, May and June over large areas had an adverse effect on crops, particularly in Eastern Canada. Better weather in early July has resulted in some improvement but heavy rains have caused damage particularly in Manitoba and Eastern Ontario.

ANNUAL AND MONTHLY INDEX NUMBERS
WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES (a)

Year	Wholesale Prices 1935-39=100			Farm Prices of Agricultural Products 1935-39=100	Commodities and Services used by Farmers 1935-39=100		Cost of Living 1935-39=100	
	Farm Products	Field Products	Animal Products		Eight Factors	Eleven Factors	Farm Living Costs	Urban Living Costs
	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1913.....							79.6	79.1
1914.....							82.0	79.7
1915.....							86.3	80.7
1916.....							93.6	87.0
1917.....							111.6	102.4
1918.....							131.4	115.6
1919.....							143.0	126.5
1920.....							170.7	145.4
1921.....							139.5	129.9
1922.....					126.9	13.29	127.5	120.4
1923.....					118.7	128.7	127.9	120.7
1924.....					122.5	132.6	125.1	118.8
1925.....					124.3	131.8	123.6	119.8
1926.....	144.4	158.5	130.2		120.6	129.3	120.9	121.8
1927.....	138.6	149.4	127.8		120.9	130.1	119.5	119.9
1928.....	136.3	134.3	138.2		119.4	128.2	118.3	120.5
1929.....	140.8	137.2	144.4		118.4	127.5	117.4	121.7
1930.....	119.5	105.8	133.3		105.7	116.3	113.7	120.8
1931.....	78.9	65.0	92.7		91.8	100.8	103.7	109.1
1932.....	65.5	60.4	70.5		88.7	93.4	97.7	99.0
1933.....	69.3	69.3	69.2		88.4	90.0	95.7	94.4
1934.....	83.5	80.5	86.5		96.8	96.0	97.8	95.6
1935.....	89.2	84.4	94.1	88.0	95.6	96.0	97.9	96.2
1936.....	97.9	102.2	93.7	96.9	98.4	98.0	98.3	98.1
1937.....	117.4	128.9	106.0	119.7	108.5	105.4	102.9	101.2
1938.....	102.9	100.9	104.8	105.0	101.1	101.5	102.0	102.2
1939.....	92.6	83.7	101.5	91.8	96.1	99.1	99.5	101.5
1940.....	96.1	85.4	106.7	96.8	102.3	105.8	108.6	105.6
1941.....	106.6	88.9	124.4	110.2	108.2	114.2	114.2	111.7
1942.....	127.1	109.7	144.6	133.1	119.7	128.1	119.2	117.0
1943.....	145.4	129.0	161.8	157.8	122.4	136.0	121.7	118.4
1944.....	155.3	144.5	166.1	171.8	125.7	139.5	122.8	118.9
1945.....	160.3	150.4	170.2	176.6	125.5	142.6	123.2	119.5
1946.....	164.9	148.8	181.2	183.7	127.7	145.4	127.1	123.6
1946								
Apr.....	164.4	150.4	178.4	182.8	128.3	146.9	126.1	120.8
May.....	165.7	151.1	180.3	184.8				122.0
June.....	168.8	152.2	185.4	187.0				123.6
July.....	170.7	156.3	185.1	188.4				125.1
Aug.....	167.1	150.5	183.7	187.7	128.8	149.0	130.5	125.6
Sept.....	164.5	145.8	183.1	184.6				125.5
Oct.....	164.2	144.3	184.2	184.1				126.8
Nov.....	164.5	143.7	185.3	184.8				127.1
Dec.....	165.6	143.6	187.7	185.5				127.1
1947								
Jan.....	168.0	143.7	192.3	185.7	130.4	146.7	132.2	127.0
Feb.....	169.0	144.3	193.8	186.8				127.8
Mar.....	170.0	145.2	194.8	188.9				128.9
Apr.....	171.3	145.4	197.2	190.3	138.5	156.8	136.1	130.6
May.....	174.0	150.2	197.8	192.3				133.1
June.....	175.7	151.6	199.8					134.9

(a) All index data computed by Dominion Bureau of Statistics.

(b) Canada. Dominion Bureau of Statistics, Prices Branch. *Wholesale Price Index Numbers of Canadian Farm Products*. (Mimeo.) Ottawa, Feb. 1947. Wholesale prices of products of Canadian farms.

(c) Ibid (b). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid. (b). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agricultural Division. *Index Numbers of Farm Prices of Agricultural Products*. (Mimeo.) Ottawa. Monthly.

(f) Canada. Dominion Bureau of Statistics, Prices Branch. *Price Index Numbers of Commodities and Services Used by Farmers*. (Mimeo.) Ottawa, Jan., Apr. and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binding twine, seed and hardware.

(g) Ibid (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) Ibid (f).

(i) Canada. Dominion Bureau of Statistics, Prices Branch. *Prices and Price Indexes, 1913-43*. Ottawa. 1945 and (Mimeo) Nov. 1946.

In the Maritimes, general improvement has taken place and hay yields are good but the catchy weather has made haying difficult. In Ontario shortage of seasonal labour is added to the difficulties of haying during a generally rainy season. Tobacco is promising, corn is very late. Coarse grains in Ontario are uneven and acreage considerably reduced. A heavy movement of feed grains to Eastern Canada will be needed to maintain live stock numbers.

On the Prairies southwestern, west central and northern Saskatchewan, and southeastern Alberta, crop prospects are poor, in fact the outlook in most sections of the West has worsened in the last fortnight.

The apple crop is especially promising in Ontario and British Columbia but is more variable in Nova Scotia. Generally speaking, prospects for potatoes are quite good.

Live Stock Marketing.—Cattle marketings for the first 27 weeks in 1947 were lower than for the same period in 1946, the comparable figures being 639,288 and 737,206. Shipments of calves have been also lower, 398,209 as compared with 417,515. Marketings of sheep have been reduced from those of a year ago, 212,074 head as against 265,849 in the first 27 weeks of 1946. Marketings of hogs are down too, being 2,338,677 compared with 2,521,874 a year ago. In recent weeks, there have been larger shipments and the movement of hogs has been somewhat higher than anticipated.

Dairy Production.—Perhaps the most important development in dairying was the removal of butter from the list of rationed goods at the beginning of June. Over the first six months of this year, production of creamery butter was 1.3 per cent more than during the first six months of 1946. There was a 6.2 per cent increase in Quebec and a 10.1 per cent increase in Ontario. All other provinces reported reductions, the most marked being in British Columbia with 25.5 per cent and Prince Edward Island, with 21.1 per cent.

Cheddar cheese production reflected a reduction of 22.2 per cent over the first six months of 1947 compared with the first half of 1946. The biggest reduction took place in Quebec and amounted to 40.0 per cent. In Ontario, output fell off 17.9 per cent. Only in Manitoba was there an increase and this was substantial being 23.7 per cent but total production in this province is not large.

Stocks of creamery butter in store at July 1, 1947 in nine cities were 25,373,105 pounds compared with 20,622,990 a year earlier. Cheese in storage in the same centres represented 20,468,291 pounds at the first of July this year as against 27,995,347 pounds on the same date a year ago.

For the first half of this year, ice cream production showed increases in all provinces, the highest 52.1 per cent being in British Columbia. In Prince Edward Island, Saskatchewan and Alberta increases of over 40 per cent are reported. In Ontario, the increased output was 27 per cent more than in the first 6 months of the previous year.

Concentrated milk products showed a 5.0 per cent increase in the period under discussion. Substantial declines occurred in condensed milk with the exception of the bulk product which showed a 7.6 per cent increase.

Fluid milk sales in the first four months of 1947 showed variable trends. St. Hyacinthe, Quebec, reported an increase of 20.8 per cent but in most markets, sales were lower. Montreal showed a 5.0 decline and Toronto 5.8 per cent. Kingston reported 13.9 per cent lower sales and in the Sydney area in Cape Breton, the reduction was 16.1 per cent. Calgary reported a decline of 6.5 per cent.

Compared with the first four months of 1939, however, some markets in Canada showed large increases in fluid milk sales. Moncton, New Brunswick, leads in this respect with a rise of 193.8 per cent. Fort William and Port Arthur report 181.1 per cent, Victoria, B.C. 102.5; Quebec, 94.6; Ottawa-Hull, 92.7; Edmonton, 92.3; Montreal, 66.8; Toronto, 50.7; and Winnipeg, 48.2 per cent.

PREMIUMS RECEIVED BY GROWERS FOR VARIETIES AND GRADES OF WESTERN ONTARIO APPLES¹

M. RACHLIS

Western Ontario apple growers who produced Northern Spy instead of Wealthy between 1935 and 1944, received an average premium of 48 cents or 57 per cent per bushel. This premium indicates a strong consumer preference for certain varieties. Consumers also showed their preference for better quality fruit, regardless of variety, by paying an average price premium of 30 per cent for No. 1 above Domestic grade of apples, in the same period. To the extent that a grower produced the preferred varieties and grades of apples, he increased his net return from the sale of his fruit.

Method and Scope.—This study was made in order to evaluate some of the factors that contribute to higher net returns to growers. The principal aims were to discover if any relationships existed between variety and grade, variety and return, and grade and return, of apples in Western Ontario. The records of five central packing and selling agencies were examined and abstracted with these objectives in view.

Nature of Sample.—Ontario was divided into Eastern and Western sections, at Toronto. In the Western portion, five representative cold storage packing plants were chosen. Geographically, these establishments were well scattered throughout the area. They varied in size and included one small plant, three of varying medium size, and one large plant. Both co-operative and stock company types of ownership were represented amongst them.

The data obtained covered the ten-year period 1935-44 inclusive. During this time the province of Ontario produced 16.5 per cent of the total apple production in Canada: Western Ontario's share was 61 per cent of the provincial production; and the five companies under investigation handled 23 per cent of the Western Ontario crop in this period.

Varieties Studied in Detail.—The nine largest selling varieties were chosen for detailed study. These were: Baldwin, R.I. Greening, McIntosh, Russet, Snow, Northern Spy, Stark, Tolman Sweet and Wealthy. These nine varieties formed 80 per cent of the total volume of sales by the five companies for the ten-year period.

Reduction in Number of Varieties.—Forty varieties of apples are sold in appreciable amounts in Western Ontario. Many more varieties are listed as "various" or "unknown" on growers' sheets. The nine varieties of apples formed 74 per cent of the total volume of sales by the five companies in 1935. By 1944 this portion had increased to 85 per cent. These figures suggest that growers are reducing the numbers of varieties and are concentrating on a few more profitable types. An interesting comparison is available in this connection. Dr. J. F. Booth, reporting on a study of the Norfolk Fruit Growers' Association of Simcoe², records that a total of eighty varieties of apples was listed on their packing sheets between 1908 and 1929. By 1944 this list had shrunk to only twenty-five varieties.

Relative Importance of Varieties.—Northern Spy was by far the most popular variety between 1935 and 1944. Not only has its volume of sales been more than twice that of the next variety, but it shows a tendency to increase. McIntosh too is increasing in proportion of total sales. These two together with Baldwin and Snow are the four largest selling varieties every year of the 1935-44 period.

While Spy and McIntosh were increasing in volume of sales, an opposite trend was shown by Baldwin and Wealthy. Baldwin, though still a heavy selling

¹ Based on an unpublished study of Apple Marketing in Western Ontario.

² Booth, J. F. Apple Prices and Premiums Paid for Preferred Varieties. *Econ. Annalist* I, No. 4:1. 1931.

variety, is falling off rapidly. Wealthy, never of major importance, may be listed as another "various" before very long. The others, Greening, Russet, Snow, Stark and Tolman seem to be holding their own.

Volume of Sales on Basis of Grade.—Selling apples, on the basis of established Dominion grades, became common in 1938. Between 1938 and 1944 more than 85 per cent of all sales, by the five companies, were on a basis of these grades. Before 1938 only about one-half the sales were on this basis.

Relationship of Variety to Grade.—Tolman showed the highest pack out of No. 1's with 70 per cent, and Spy the lowest with 43 per cent for the ten years. The relationship of variety to grade was consistent, with some varieties packing out higher proportions of No. 1 than others, every year. With the exception of Spy, those varieties that showed a low proportion of quality fruit were falling in volume of sales. However, to this alone cannot be attributed the decline in sales. Factors such as the relationship of yield to variety, and price to variety, must also be taken into account. The ten-year average percentage packout of No. 1 follows: Tolman 70·0; Snow 67·8; McIntosh 65·7; Russet 65·6; Greening 63·8; Stark 58·5; Wealthy 55·6; Baldwin 46·7; Spy 43·1.

Relationship of Variety to Return.—Spy and McIntosh received a premium over all other varieties between 1935 and 1944, while Baldwin, Tolman and Wealthy were discounted heavily. The ten-year average return per hamper, for No. 1 grade varied from \$1.32 for Spy to \$0.84 for Wealthy. The varieties in order of return were Spy, McIntosh, Russet, Greening, Snow, Stark, Baldwin, Tolman and Wealthy.

This premium, transmitted from retailer to wholesaler to packing plant and finally to the grower, indicates a strong consumer preference for certain varieties of apples. So long as such a preference is shown by consumers, it is to the advantage of the grower to cater to it.

Relationship of Grade to Price.—No. 1 apples brought an average premium of 24 cents per bushel above the return for Domestic grade, regardless of the variety. This premium varied both between crop years and with varieties. In only two years of the ten was the average premium less than 20 cents per hamper, and for five years it was 25 cents or more. Because both returns per hamper and the premium vary from year to year, the percentage premium is a better indication of actual conditions. The average premium for the nine varieties, 1935-44, was 30·5 per cent. This varied from a low of 26·6 per cent for Baldwin to 33·6 per cent for Wealthy.

This premium shows that the consumer who foots the bill at the end of the marketing chain is willing to pay nearly one-third more for better quality fruit. Since various studies have shown that it is possible to increase the proportion of high quality fruit by improving cultural practices, there appears to be scope for added expenditures on orchard culture. Such an expenditure would be limited by the 24 cents per bushel premium for the increased amount of No. 1 apples.

Containers Used in Western Ontario.—Hampers were used to pack 88 per cent of the crop in 1944. The use of the barrel had been declining gradually even prior to 1935 due to the demand of both consumers and retailers for a smaller package. The war, cutting off export markets, accelerated this shift. The six-quart basket was used to some extent, but until 1944 had not developed a large following. Both packers and wholesalers expressed dissatisfaction with present packages and research is being carried on to discover possible substitutes.

Variations in Charges to Growers.—Charges to growers for services performed by the central packing agencies varied considerably. The average charge was 38 cents per hamper, 1935 to 1944, with a low ten-year average charge of 24 cents and a high of 50 cents. These differences were not due to variations

in kind of services rendered. Because it would need a cost-accounting study to evaluate all the factors involved, this survey can only point out that such large differences do exist.

Conclusions.—The apple grower can exercise some control over the returns for his produce by taking advantage of premiums paid for preferred varieties and high quality fruit. To the extent that he can cater to consumer preferences he can increase his returns. Central packing plants can also contribute to increased returns to growers, by reducing their charges. Charges can be reduced by making fullest use of cold storage facilities. This can be accomplished by increasing the extent to which other commodities are stored when the volume of apples in storage is reduced. However, the most direct means by which growers can increase their net returns from the sale of apples is the growing of preferred varieties and grades.

CANADIAN AGRICULTURAL ECONOMICS SOCIETY

The Society's 17th Annual Meeting, held at Lethbridge, Alberta, June 23-26, in conjunction with the annual convention of the Agricultural Institute of Canada, was featured by an attendance of more than forty, including some twenty-five of the total membership of 114. Many of those present took part in the proceedings. Six main papers were read during the two crowded mornings. Papers and discussion leaders were as follows:

"Economic Aspects of Conservation and Land Use Programs" by S. Mysak.

Discussion H. Van Vliet and C. V. Parker.

"Research in Rural Levels of Living in Western Canada" by E. P. Reid.

Discussion C. C. Spence.

"A Proposed Method, Consistent with Economic Progress, of Supporting Farm Income during Periods of Depression" by G. L. Burton. Discussion H. S. Fry and Andrew Stewart.

"The Use and Development of Production Functions for Firms in Agriculture" by H. W. Harries. Discussion Sol Sinclair and H. L. Patterson.

"The Economic and Statistical Work of FAO" by J. B. Rutherford.

"Some Aspects of the International Situation in Relation to Canadian Agriculture" by D. A. B. Marshall. Discussion J. A. Young.

The report of the publications committee was accepted, that proceedings be published in *Scientific Agriculture* again in 1947, and that ways of issuing a more distinctive report of proceedings and articles by members in the future be explored. The committee was continued, and instructed to investigate the cost situation.

The membership was informed of the opportunity to develop joint membership with the American Farm Economic Association, and the executive council was instructed to proceed with the matter.

The new president, C. V. Parker, was inducted, and it was announced that other members elected to the executive were G. L. Burton, vice-president, and S. C. Hudson, H. K. Leckie, Sol Sinclair and H. Van Vliet, Councillors.

The annual meeting of the American Farm Economic Association will be held at Green Lake, Wisconsin, September 8 to 11. Ample provision is made for members and their families to be accommodated in hotels and tourist facilities are also available.

Professor Asher Hobson, Department of Agricultural Economics, University of Wisconsin is President of the Society and Prof. L. J. Norton, 305 Mumford Hall, University of Illinois, Urbana, Illinois, is Secretary-treasurer. The full program is being published in the August issue of the *Journal of Farm Economics*.

FARMING IN PETERBOROUGH COUNTY, 1818-1900¹

JEAN M. MANN

Peterborough County, which lies midway between the cities of Toronto and Kingston and which is separated from Lake Ontario by the County of Northumberland, was first settled in 1818 by a number of colonists who sailed from Cumberland, England, and by a group of United Empire Loyalists who arrived later that year from Delaware County in New York State. These colonists settled in the Township of Smith within ten miles of the present city of Peterborough. The settlers on arrival, erected a temporary log house just outside the present limits of the city. Here they lived in common, until by mutual assistance, small houses or shanties were built on their several lots.

The method of obtaining a title to land is described by Dr. Poole² when he writes,

"The first requisite to procure land in those days was to take the oath of allegiance, on which a certificate was issued as evidence of the fact. A location ticket for the lot sought was then granted for which a small fee was charged. Owing to the wild and unsettled state of the township (Smith) when the first of these were issued, the first settlers were not required to make any other payment than this nominal one; but in later years, a fee of \$25 was charged to others on the issuing of their deed. Before a full title to the land was procured, an affidavit, made by two persons, setting forth that the settlement duties were performed, and a house at least 18 by 20 feet in size erected, had to be presented at the land office, which for some years rendered a trip to Toronto necessary."

These early deeds, made of beeswax, were circular in shape and were stamped with the seal of the Crown.

During the first few years there were great difficulties in procuring the necessary provisions with which to support life. Supplies had to be brought from Port Hope or Cobourg, a distance of 30 miles. After small clearings had been made and the wheat sown, reaped and flailed there was no mill closer than Port Hope to convert it into flour. Men were known to carry wheat that distance on their shoulders, taking along a supply of potatoes as food and storing a portion for the return trip under some convenient wind-fall about halfway. Others hollowed out the stumps of trees and crushed the grain with a huge mallet. Still others made wheat palatable by boiling or roasting and, as food for children, it was even chewed by the parents.³ Progress was evident when in 1821 Adam Scott, founder of the City of Peterborough, erected a mill on the Otonabee River which provided grain grinding facilities for the little colony.

Aid to Settlers.—Four years later, in 1825, the *Robinson Immigrants*, brought to Canada by the Hon. Peter Robinson under the auspices of the British government, settled in the new community. Most of the 415 families had left Southern Ireland because of famine conditions which had made them directly dependent on poor relief.⁴ Rations, provided by the British government under the settlement agreement, were continued for 18 months and consisted of a daily allowance of one pound of pork and one pound of flour for each person over 14 years of age, half a pound of these to children between 5 and 11 years, and a

¹ This is the first of two articles on the history of the farming community of Peterborough. Miss Mann is a member of the sixth generation of one of the first families who settled in the County and her family is still farming the land bordering Chemong Lake in Smith Township where her forefathers settled. Dr. T. W. Poole's *Early Settlement and Subsequent Progress of the Town of Peterborough*, published in 1867, is the main reference. Information was received also from relatives and from the Peterborough Public Library.

² Poole, T. W. *Early Settlement and Subsequent Progress of the Town of Peterborough*. Peterborough, Ont., The Peterborough Printing Co., Limited. Reprinted 1941. p. 124.

³ Poole, p. 125.

⁴ Farm correspondence in the Peterborough Public Library.

pound of meat and flour to every 4 children under 5 years. Each family was supplied with a cow, an axe, an auger, a handsaw, a hammer, 100 nails, 2 gimlets, 3 hoes, 1 kettle, 1 frying pan, 1 iron pot, 5 bushels of seed potatoes and 8 quarts of Indian Corn. In addition, each family of 5 persons was given 120 acres of land and an allowance of \$10 to build a shanty.⁵ These provisions were much more plentiful than those of the English settlers who had not received any such government assistance and, as a result, not a few of the men traded food and spare tools for whiskey, the production of which Adam Scott soon found to be more remunerative than milling.

Despite these apparent advantages as far as necessities of life were concerned, the immigrants had many discouragements and difficulties to overcome. Almost the moment they arrived in the country, fever and ague assailed them and scarcely a family escaped at least one fatality, both among the Irish and the earlier settlers. However, the indomitable spirit of the people finally prevailed and as a tribute to them and to the Hon. Peter Robinson, the name of the present city was changed from Scott's Plains to Peterborough in the year 1827.

At first the immigrants were regarded with coldness and distrust by the earlier settlers. Many rumours circulated accusing them of idleness but an estimate of their clearings and produce on hand on November 24, 1826, a year after their arrival, would dispel these rumours. Thirteen hundred and eighty-six and a half acres of land had been cleared and fenced, of which 363.5 were seeded to fall wheat. Produce on hand included 67,799 bushels of potatoes, 25,623 bushels of turnips, 10,438 bushels of Indian Corn, and 9,067 pounds of maple sugar. Besides these, 40 oxen, 80 cows and 166 hogs had been purchased by their labour.⁶

Further assistance than that rendered the Irish immigrants under the settlement terms was sought by the settlers of Smith in 1826. In need of milling facilities more adequate than Adam Scott's small mill on the Otonabee, a deputation was appointed to meet the governor when he visited the colony, to ask for government aid. Before the spring of the next year the government announced it would undertake the cost of erecting the mill. In order to provide lumber for the grist mill a saw mill was built and the former, upon completion, was offered for sale and purchased by two local men.

As early as the 1830's the government recognized the value of agricultural societies and gave them a grant which enabled them to hold annual fairs. These furthered interest in agriculture, especially livestock, by holding competitions. At least two local fairs have been carrying on these interests for almost a century.

Fife Wheat.—Perhaps the most outstanding contribution made by the county to the advancement of agriculture all across Canada was the development of *Fife* wheat, a variety which became very popular in the Canadian West and which was used as a foundation for Marquis and other well known varieties. Fife wheat was first grown in Canada on the farm of David Fife, Otonabee Township, Peterborough County, about 1842 and its origin can be learned from the following letter written by Sylvester Fife, a son of David Fife, which appeared in the *Canadian Farmer* on April 15, 1912.⁷

"The late David Fife, Otonabee, Peterborough County, wished to see the quality of our Canadian wheat improved, and with this object in view, sent to Scotland for samples of wheat. Some were forwarded to Port Hope and lay there in storehouse during fall and part of the winter. Three dollars storage was paid and the wheat was sown, but it came to nothing. My father then wrote again to his friend, Mr. Struthers, clerk in the grain store in Glasgow, for the second supply of wheat. Mr. Struthers noticed

⁵ Poole, pp. 6-7.

⁶ Poole, p. 9.

⁷ Patterson, F. C. In Poole (Centennial Edition), p. 37.

a new kind, an excellent sample brought by a ship direct from Danzig. He thought it would be just the kind for Canada and sent two samples, one of fall wheat and the other of spring wheat. These were sown in the year 1841. . . . The fall variety came to nothing, but the spring variety proved superior to any other kind sown. Out of this three ears were saved. But owing to the illness of my mother, who took special charge of this wheat, it was not sown until after the other wheat was above ground. At harvest time the Siberian wheat was badly rusted, whereas this sample was not affected in the least. This crop was gathered by my mother and brother David, in a sheaf and carefully stowed away. They had now realized a quart of seed. This was sown the following spring by my mother and brother, producing half a bushel at harvest time, and from the produce of this half bushel the neighbours were supplied and the county benefited by the introduction of the Fife wheat."

This wheat was known in Canada as Fife, Scotch, and Glasgow. Actually it never grew in Scotland but was imported direct from Danzig.

Changes in Farm Practices.—The early settlers, although crude in their farming practices, showed much skill in inventing tools to meet their particular needs. Grain, sown by hand among the stumps, was cultivated by a V-shaped harrow made from the branches of trees and constructed thus in order that it would glide off when striking a stump. Harvesting was done first by a sickle, then a cradle, and finally a combined mower-reaper emerged which had a table from which the sheaves had to be forked and tied by hand.

Threshing the matured kernels presented an equally difficult problem and the flail, made by joining together the ends of two stout hickory poles with tough leather thongs, threshed out the grain on the barn floor and the wind blew away the chaff. It was in the 1860's that the first so-called threshing mill appeared. Looking something like an enlarged fanning mill with a cylinder on it, this mill was driven by horse power—a source utilized at least 20 years before steam engines became available. During this same period hay rakes, cultivators, and mowers became quite common and all increased the strain on the farmer's limited capital resources.

The first span of horses was brought into the county from New York State by one of my forefathers in the year 1823⁸ and it was at least 10 years before they became general in the county. Oxen were used largely and appeared in the census as late as 1881. Cattle were very scarce in the early days because there was insufficient feed to keep them living through the long winters and often they were forced to subsist on buds and branches of trees and few survived.

Cattle numbers showed a marked increase after the advent of cheese factories, the first of which was built in 1866 by John Walton of Smith Township.⁹ Because of this new outlet for milk, increased stress was placed on cattle breeding. Beef breeds were especially popular because the demand for milk was seasonal and because they could be disposed of more easily for meat. A further change in farm practices was evident when grain and hay, formerly grown for sale, were grown for feeding stock.

It is interesting to note also that the marketing of milk through cheese factories helped relieve the currency shortage, in that sales provided a steady cash income for at least six months of the year. In the earlier period currency was very scarce and purchases were made on *tick* or credit until the annual fall payments for grain and feed were received. Few outlets were available for obtaining other incidental cash receipts because of the lack of adequate transportation and markets. One chap, who is well past his 90th birthday, said the

⁸ From a copy of a letter sent with Mr. James Mann to his daughter-in-law when he returned with the horses.

⁹ Poole, p. 129.

first commodity his mother sold for cash was ashes and that, having bought a *pound* of tea on tick, it took her a whole year, collecting all available coins, to pay for it. Similarly when the road tax was levied to replace statute labour, he wondered how he would be able to pay it in cash.

Another factor which accentuated these trends was the change in the rural-urban population picture. The urban population more than doubled between 1881 and 1891 and the rural population ratio changed from 100 per cent in 1818 to around the 50 per cent mark at the turn of the century. Until 1881 the rural population had increased steadily. Due to the lack of alternative occupations and to the prevalence of large families, by that date it was almost impossible to buy a farm anywhere in the sections of the county suitable for farming. This general condition of over population contributed to the emigration of farmers to the American West and, in a much larger number, to the Canadian West after the C.P.R. was completed in 1885. The opening of the Canadian West proved a boon to the whole Ontario economy because machinery, provisions and supplies were required. Ontario factories provided a large percentage of these, thus making many jobs available for the rural population. This same trend was evident in Peterborough County.

The increase in urban population coupled with the demand created by cheese factories caused a large increase in requirements of fluid milk and butter and by 1900 a decided shift from beef to dairy breeds of cattle was evident. As the urban population increased and as transportation facilities improved, more outlets were available for home-slaughtered meats, poultry, and eggs. To provide facilities for marketing these products each Saturday and sometimes twice weekly an open market was made available in Peterborough. This market is still being used.

By the turn of the century marked changes in farming practices had taken place. The dairy farm had replaced the grain as the general type. Mechanized machinery, although still horse drawn, had replaced the crude, early make. The settlers had adapted themselves to the beginnings of urbanization and industrialization.

New housing completed in Canada during 1946 totalled some 62,500 units. This represents an increase of 14,500 dwelling units over the previous year's completions of 48,000 and is the largest annual increment since the best pre-war years, the late twenties, when an estimated 50,000 to 65,000 units were built annually. Of the 1946 total, 44,700 were located in urban areas (including some rural areas forming parts of large metropolitan centres) and 17,800 in rural areas.

In 1946, the volume of publicly-aided house-building in Canada reached an all-time high with two out of every five homes being built with direct Federal Government assistance. During the year, government-sponsored housing is estimated to have exceeded 25,000 new housing units, involving the expenditure of more than \$100 million, almost triple the 1945 volume of publicly-assisted house-building and five times that of 1939, the best prewar year.

The Ministry of Reconstruction in Belgium assists people who had property damaged or destroyed during the war. The subsidies cover only a part of repair or rebuilding costs, and co-operatives are being organized to utilize to the best advantage the government grants.

Members must own property or real estate. Building works are executed by the co-operative societies; members pay for these works, and the net profits are distributed on a patronage basis. Twenty-six co-operatives are now active throughout Belgium.

A STUDY OF LAND SETTLEMENT IN THE PRINCE GEORGE-SMITHERS AREA, BRITISH COLUMBIA¹

J. C. MAXWELL² AND W. J. ANDERSON³

The various agricultural regions in British Columbia offer marked contrast. The industry has been limited by the rugged topography of the province, and certainly settlement has been restricted by the high mountain ranges and deep valleys. Only a few of the many upland flats and river valleys have been found suitable for farming. Even in localities of good soil, the heavy natural vegetative cover has been an obstacle to agricultural expansion.

Some of the populated parts of the province have distinct advantages which have been properly exploited, while other regions have been settled with a minimum of planning. Undoubtedly some of the land now being used has questionable agricultural value, while extensive blocks of good farm land remain unused.

Agriculturally, the most advanced areas in the province are the Okanagan Valley in the Interior, and the Lower Fraser Valley on the Coast. With the aid of irrigation the Okanagan Valley has become a prosperous highly-developed fruit growing region. The Fraser Valley is more closely associated with the market in the city of Vancouver, and dairy, poultry and small fruit farming is highly developed.

Other districts in British Columbia have expanded in a less spectacular manner. The Kootenay and Cariboo areas of the Interior, and portions of Vancouver Island, have reasonably well established agriculture, according to their various characteristics.

Close to the geographical centre of the province, but north of the principal producing areas, there is a narrow belt of partly developed land along the railway line to Prince Rupert. For a distance of 250 miles, from Prince George to Smithers, there is a string of agricultural communities. Seldom very far from the railway line, the settlement occurs in pockets; sometimes there is a considerable distance between these groups, but four distinct blocks of settlement may be distinguished. These are near the towns of Prince George, Vanderhoof, Francois Lake and Smithers.

The Economics Division became concerned with this area in 1944, and over a period of two years 263 farms were studied out of the 1,200 in the area. This representative sample was a cross section of the farms and presented data on each of the four districts.

These records of individual farm business enterprises were so compiled as to provide information on farm organization during the years under study. In addition, knowledge was gained as to the relationship of natural conditions (soil, climate, water supply, and so on) to successful farming. The agricultural development in terms of land use, farm types, financial gains, rate of land improvement, size of farm, and capital investment, was also considered in relation to successful farming.

The Census of 1941 recorded the information that 324,235 acres were actually in farms in the area, and that 68,115 acres (or 21 per cent) were improved land. For the most part, farms seemed to be located on the arable soil types as classified by the Soil Survey. As there are 832,462 acres of arable land in the area, development will take place not only by the opening up of new farms, but also by an increase in the amount of improved land in the existing farms.

¹ Anderson, W. J., "A Study of Land Settlement in the Prince George-Smithers Area, British Columbia"—Economics Division, Dominion Department of Agriculture.—Unpublished.

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The soils in the area belong to the Northern Woodland Soils Region, and are made up chiefly by Northern Grey Wooded and Grey Black Transition soils. The topography of the agricultural areas is generally level to undulating in the eastern portions (Prince George) and more sloping in the central and western sections. Due to the mountainous nature of the country as a whole, stony land is not uncommon.

Most of the agricultural land must be cleared, although both low-lying and alpine meadows do exist. The natural vegetative cover is often thick, varying from light poplar to heavy pine and spruce.

The climate of the area may be classified as an Interior Continental type. It is characterized by low rainfall (but no distinct dry season) with moderate summer temperatures and cold winters. Temperature, rather than precipitation, is the controlling factor in crop production. The mountainous nature of the country presents unusual air-drainage conditions, and long-time averages for the length of the frost-free period vary from 60 to 106 days in different districts, with often considerable variation from year to year.

The agricultural development in the Prince George-Smithers area has not been rapid. The number of occupied farms increased from 1,110 to 1,205 between 1931 and 1941. However, the individual farms did increase in size as far as improved acreage is concerned. The average expansion amounted to nearly 2 acres increase per farm each year during the decade.

The type of farming did not change much during that ten year period. There was a slight increase in the hay and pasture area, coupled with an increase in live stock. There was a corresponding decrease in the acreage of cereal crops.

The agriculture of the region to-day is based on hay crops and live stock. Timothy and clover seed are produced in fairly large quantities for shipment all over Canada. The major source of revenue, however, is from the production of beef cattle. In the western part of the area whole milk and vegetables are important sources of farm income.

Acquisition and Tenure.—Among the farmers at present in the area, fewer than one-half started on raw land, while the others purchased farms which were already partly developed. At the time of purchase raw land was worth \$5.25 per acre, and improved land had a value of \$14.15 per acre. Payment terms did not seem to be standardized and the cash payment at the time of purchase was on the average slightly less than half the value of the land.

The history of land acquisition showed that many operators who started on raw land actually later made a purchase of partly developed land nearby, before their first parcel was fully developed, retaining title to both parcels. This would indicate that many farmers considered it cheaper to purchase or rent improved land, rather than to clear and break raw land.

TABLE 1.—METHOD OF ACQUISITION OF FIRST PARCEL OF LAND, PRINCE GEORGE—SMITHERS AREA, BRITISH COLUMBIA

Type	Raw land	Improved land	All Land
	%	%	%
Homesteaded.....	17	0	17
Purchased from Crown.....	17	9	26
Purchased privately.....	10	30	40
Purchased from company.....	0	3	3
Inherited.....	0	5	5
Rent.....	0	9	9
Total.....	44	56	100

Among the farms studied, 82 per cent were owned by the operator, and 6 per cent were partly owned. One-half the farms were still occupied by the first owner. This would indicate that most of the land in the region is not valued as an investment, and that the country is at an early stage of development.

Clearing and Breaking.—Most of the agricultural land had to be cleared of a heavy forest growth. This was accomplished mainly by hand labour without the aid of mechanical equipment. Most of the clearing was done by the operators themselves, at rates of from two to three-and-one-half acres a year in the different districts. Some clearing was done on a contract basis but usually little equipment was used and only labour expended.

TABLE 2.—AVERAGE CHARGES FOR POWER AND CONTRACT CLEARING AND BREAKING OF RAW LAND, PRINCE GEORGE-SMITHERS AREA, 1943-1944 AND 1944-1945.

	TYPE			
	Heavy	Medium	Light	Average All Covers
	\$	\$	\$	\$
Clearing.....	52	30	13	32
Breaking.....	7	7	7	7
Total.....	59	37	20	39

In recent years, with the introduction of power machinery, more contract clearing has been done. This work varied in cost from \$5 per acre on very light cover, to about \$100 per acre on the heaviest cover. The average cost of clearing by machinery for all types of cover was \$32 per acre. No attempt was made in the study to estimate the cost of clearing in terms of labour requirements. However, the slow rate of improvement is indicative of the high cost in terms of labour.

It is clear that the cost of bringing the land under cultivation was high in relation to the probable net income which the land might produce. The fact discouraged private loan agencies from investing in the area. The consequent lack of capital has undoubtedly been a factor in the slow agricultural development there.

Farm Types and Land Use.—In addition to the part-time farming group, who earned a major share of their income from non-agricultural sources, there were seven distinct farm types: crop, live stock, mixed crop and live stock, whole milk, poultry, vegetable seed, forage crop seed. About half the farms came into the live stock, and mixed crop and live stock groups.

Grass occupied the major portion of the improved land. As a rule it was given over to hay or to pasture, but timothy and clover seed were also harvested for seed. In the Vanderhoof district, however, cereals (chiefly oats) occupied over 40 per cent of the farming land.

Farmers were generally interested in grass and clover seed production and it is likely that this industry will be more important in the land use pattern of the area in the future.

TABLE 3.—LAND UTILIZATION, PRINCE GEORGE-SMITHERS AREA, BRITISH COLUMBIA, 1943-1944 AND 1944-1945

Land Use	Prince George	Vanderhoof	Smithers-François Lake
	%	%	%
Cereals.....	27	42	18
Grass Seed.....	7	5	9
Hay and pasture.....	60	28	68
Summerfallow.....	2	23	1
Breaking.....	3	1	1
Other.....	1	1	3
Average improved acreage.....	100 45	100 84	100 104

Alternative Employment.—In 1944 and 1945, high employment and good wages in the local lumbering industry were reflected in the incomes of most of the farmers in the area. Revenue from this source averaged \$341 per farm for the year.

It was noteworthy that 18 per cent of the farmers were part-time, and that these operators averaged \$980 in non-farm income compared with \$187 for the full-time farmers. The part-time operators were permanent residents, for they averaged eleven years on their farms. However, the part-time farmers had only half as much land under cultivation.

Net Worth.—Real estate was the largest single item of the settlers' capital. It averaged \$3,000 to \$4,000 per farm, and amounted to about one-half the total assets. Whole milk farms, and forage crop seed farms required greater organization and their net worth the greatest, amounting to an average of over \$12,000. Apart from the part-time and subsistence farms which averaged less than \$5,000 capital per farm, the crop farms had the smallest amount of capital, averaging \$6,700 net worth per farm.

The settlers had started with an average net worth of \$2,312 which represented cash for the most part. Gains amounted to \$340 per year for all types, and those who started with more than average capital did not tend to gain at a greater rate, but merely maintained their original investment. It was not possible to put much capital to work as land improvement and building construction generally had been carried on by hand labour.

During the year under study it was found that part-time farms advanced more than the full-time farms. Poultry and live stock farms made no capital gains, but whole milk and seed farms advanced at an above-average rate.

Living Conditions and Expenses.—Living expenses were fairly closely related to income, and averaged \$699 per farm. Almost half this amount was for food purchased.

Apart from food and clothing, the level of living was found to be quite low. Particularly noticeable were the very small amounts spent on life insurance, education and personal expenses.

About one-half the food consumed came from the farm itself. The value of perquisites in the area was found to be quite high, and this emphasized that in respect to food and nutrition, the level of living was probably quite satisfactory.

Schools, churches and medical facilities were available to the communities. Three-quarters of the farms were within three miles of a grade school, and almost all were within six miles. However, some of the rural schools were closed at the time of the survey, due to a shortage of either pupils or teachers. High schools were located only in the larger centres, and because of the relatively great distance involved, these facilities reached only a few of the rural young people.

The farms were, on the average, 15 miles from doctor and hospital. Over half were more than 12 miles from these medical facilities. Accentuating this distance was the fact that almost half the farm families did not own a car or a truck.

Telephones were almost entirely absent in the area, and one-quarter of the farms had no radio. In general, the roads were good, and usually gravelled.

Farm Business During the Years of the Study.—Farm prices for the years of the study (1943-45) were somewhat higher than the long-time average. In the Prince George and Vanderhoof districts the crop was about normal, but in Smithers and François Lake, crop conditions were somewhat below average.

To the seven farm types as outlined previously, there must be added the part-time, subsistence, and "off-type" farms. These ten types were defined arbitrary on a basis of farm returns. For instance, crop and live stock farms were those in which three-fourths of the farm returns was derived from crops and live stock, respectively.

Table 4 indicates the distribution of returns according to farm type. Over the whole area, live stock returns and crop returns were, respectively, 67 and 26 per cent of total returns.

TABLE 4.—FARM RETURNS PER FARM, BY TYPE OF FARM, PRINCE GEORGE-SMITHERS AREA, BRITISH COLUMBIA, 1943-1944, AND 1944-1945

Farm type	Number of farms	Crop	Returns live stock	Other
		\$	\$	\$
Part-time.....	48	123	260	28
Subsistence.....	26	0	127	18
Crop.....	16	803	0	32
Live stock.....	72	26	1,131	46
Mixed.....	65	694	748	117
Poultry.....	15	89	1,165	16
Whole milk.....	8	228	5,563	74
Vegetable seed.....	3	1,407	345	0
Forage seed.....	4	2,539	616	230
Off type.....	6	0	541	1,037
Total, all farms.....	263	310	816	81

Improved acreage and productive live stock units per farm varied considerably with the type of farm. Extreme examples of intensity were illustrated by comparison of the crop and the live stock farms, which had respectively 28.5 and 3.4 acres per productive live stock unit.

The average farm in the area produced ten tons of grain and forty tons of hay during the year. This means that about 60 per cent of the feed value produced was in the form of hay. As a result cattle raising was the main live stock enterprise.

Usually horses were the source of farm power. Only one-quarter of the farms had a tractor, and this was usually operated in conjunction with horses.

In 1943 farm income averaged \$1,149 per farm in British Columbia. Of 159 farms analysed in the Prince George and Vanderhoof districts for the same year, farm income was only \$363. For 1944 the province-wide figure was \$1,517 and the Smithers and François Lake records for that year indicated \$414 farm income on the average in those districts. Perquisites made up 60 per cent of the total income in the area being studied, but only 20 per cent on all British Columbia farms.

Family farm surplus is the amount left when the \$700 allowance for living expenses is subtracted from farm income. On this basis, the majority of the farms showed a deficit. This is because most of them earned a portion of their total income from non-farm sources. For the most part the operators of whole milk and seed enterprises worked entirely on their farms, and these groups had earned a surplus.

Typical farms of the area were either live stock type or mixed live stock and crop. Accordingly these were subjected to a more detailed analysis.

It was found that productive live stock units¹ per farm were the most important factor influencing farm surplus. In addition, productive live stock units were closely associated with improved acreage per farm. A fairly regular increase in farm surplus seemed to be directly related to progression from a smaller to a larger farm unit.

¹ A measure based on feed requirements of the amount of live stock, other than horses, on a farm. Conversion of the various kinds of live stock to live stock units was made as follows: One productive live stock unit consisted of any of the following—one mature cow, one and one half steers or heifers, three calves, seven sheep, three sows, five hogs fed to market weight, one hundred hens.

Marginal farms² in the four districts appeared to be approximately as follows:

Prince George ..	19	productive live stock units and 63 acres of crop land
Vanderhoof	21	" " " " 90 " " " "
Smithers	29	" " " " 135 " " " "
François Lake ..	37	" " " " 135 " " " "

TABLE 5.—FAMILY FARM SURPLUS AND IMPROVED AREA PER FARM, ON LIVE STOCK AND MIXED FARMS BY PRODUCTIVE LIVE STOCK UNITS, PRINCE GEORGE-SMITHERS AREA, 1943-1944 AND 1944-1945.

Productive Live stock units	Number of farms	Improved area	Family farm surplus
	No.	acres	\$
<i>Prince George</i>			
1-14.....	26	39	-290
15-24.....	8	69	-93
24-34.....	1	75	347
35-.....			
<i>Vanderhoof</i>			
1-14.....	18	68	-220
15-24.....	16	92	-186
25-34.....	9	102	269
35-.....	10	159	1,027
<i>Smithers</i>			
1-14.....	19	84	-136
15-24.....	15	108	-96
25-34.....	6	141	-68
35-.....	1	162	122
<i>François Lake</i>			
1-14.....			
15-24.....	3	134	-225
25-34.....	2	116	-94
35-.....	3	139	38

Conclusion.—The study indicates that the rate of progress in agricultural development has been fairly slow. It is an example of the difficulties which face a settler who attempts to improve forested land.

The delay in development may be related to two factors. First is the cost of bringing the forested land under cultivation, and second is the handicap of comparatively high shipping costs from the area.

By hand labour, it would require from 15 to 65 years to clear the necessary 60 to 135 acres which are the minimum for a satisfactory farm unit. It is understandable therefore why one half the farms were still below that minimum. The study indicated, though, that the return to capital invested in land clearing and breaking was high. It should be noted, however, that equipment for clearing and breaking represents an investment much beyond the resources of most farmers. In order to realize the benefits, equipment of this sort has to be available on a rental basis with payment for the work amortized over a period of years. Unless this is done the financial hurdle is too great for most farmers.

² The marginal farm would represent that farm which, during the year of the study, paid operating and depreciation expenses and \$700 to the operator. It netted no surplus for interest on investment, debt retirement or savings.

MARKETING THE 1946 POTATO CROP

BY W. F. CHOWN AND W. C. WAY

In 1944 the Canadian potato crop was considerably above average. However, there was a short crop in the United States and the Canadian surplus was needed in that country. In 1945 on the other hand, the Canadian potato crop was insufficient for domestic requirements and it was necessary to import about 8,000,000 bushels from the United States which had a good crop in that year. Early in the summer of 1946 it became apparent that the potato crops in both Canada and the United States would be excessive. Dry weather in the Maritimes, particularly in New Brunswick, was serious and was likely to reduce the final crop. Rains late in August and the use of DDT increased the yield even beyond the early forecasts. Consequently when digging and marketing commenced buyers and sellers were "jittery" and unduly low prices were realized.

On October 1 a thirty-man delegation representing potato growers and dealers and Provincial Departments of Agriculture in the five eastern provinces met the Agricultural Prices Support Board in Ottawa. Delegates asserted that growers were not recovering production costs and that the outlook was very dark. While delegates requested action they were careful to point out that any policy that would increase acreage would bring disastrous results. At that time final figures on production were unavailable but the crop appeared to be about six or seven million bushels above the 1935-44 average with most of the surplus in the Provinces of Prince Edward Island and New Brunswick.

After discussing a number of possible courses of action it was decided to utilize the available processing plants at full capacity, to increase exports of seed potatoes, to increase domestic consumption of potatoes, to find new export outlets for table potatoes if at all possible, and to guarantee a price at which the Government would accept delivery of potatoes remaining unsold in the spring of 1947.

On October 17 it was announced that price support would be provided by two methods. The first method was to buy potatoes for processing, chiefly into starch. The prices to be paid producers were in Prince Edward Island, \$1.00 per hundred pounds for No. 1 and 92 cents for field run, and in New Brunswick \$1.65 per barrel for No. 1 and \$1.50 for field run. These prices were approximately equivalent. The potatoes were resold by the Board to the processors at their usual buying price for cull potatoes. The second method of supporting prices was an offer by the Board to buy all Canada No. 1 potatoes offered to them in the spring of 1947 at shipping points in New Brunswick and Prince Edward Island at \$1.00 per 75 pound bag, inspected and loaded on cars. After deducting the costs of bagging, trucking, grading, inspection and loading, this would return the producer about 1 cent per pound for "naked" potatoes at the farm.

TABLE 1.—EXPORTS OF SEED POTATOES

	1945-46*	1946-47*	Increase
	bus.	bus.	bus.
Prince Edward Island.....	1,623,000	1,824,250	201,250
New Brunswick.....	788,716	1,338,208	549,492
Canada.....	2,497,620	3,286,123	788,503

*Plant Protection Service and Fruit and Vegetable Weekly Crop and Market Report.

Potatoes for Processing.—The processing program was handicapped by the destruction by fire of one of the two large processing plants in New Brunswick, that of Hatfield's Ltd. at Hartland. Various methods of processing were

considered and explored, including the manufacture of starch, dehydration for human consumption, for animal food and for the manufacture of alcohol, either industrial or potable. Unfortunately none of these methods except starch manufacture proved economically practicable. Potatoes bought by the Board amounted to 664,599 bushels in New Brunswick and 100,975 bushels in Prince Edward Island. These were all field run potatoes containing 70 per cent or more of Canada No. 1 and were used entirely in the manufacture of starch. It is estimated that over 536,000 bushels of No. 1 potatoes were used in this manner. In addition, about 400,000 bushels of cull and small potatoes were manufactured into starch independently.

Exports of Seed Potatoes.—Notwithstanding the large potato crop in the United States exports of seed potatoes continued to that country as usual and were even higher than in the previous year. Seed potatoes exported from Canada this year exceeded shipments during 1945-46 by more than 788,000 bushels. Exports of seed from New Brunswick were 550,000 bushels more than a year ago, including an increase of 400,000 bushels to South American countries.

Export of Table Stock Potatoes.—The Department of Trade and Commerce canvassed many potential markets in South America and in Europe with the result that much more than the normal volume was exported. However, the potato supply in Canada was still far in excess of the demand.

In March the Agricultural Prices Support Board completed an agreement with the United Kingdom for 75,000 long tons of Prince Edward Island potatoes at a price of \$1.65 per 100 pounds delivered at Canadian ports. This sale was possible because of extremely wet weather in Britain during the fall of 1946 which played havoc with their own crop. The British were particular about the potatoes delivered to them because of their fear of certain insects and diseases and sent an expert to Canada to work with our officials in selecting disease-free potatoes.

Shipments commenced in March and continued through to early June. In all, 2,626,368 bushels were delivered with a total value of \$2,600,104. These shipments were made as follows:

	Bushels
March	327,104
April	556,315
May	1,637,098
June	95,851

The number of 75 pound bags was 282,400 and 100 pound bags numbered 1,364,021. This gives a total of 70,349 long tons. There were 29 sailings as follows:

TABLE 2.—SHIPMENTS OF TABLE POTATOES TO THE UNITED KINGDOM

Port	Number of Sailings	Number of bushels
Saint John, N.B.	12	949,196
Halifax, N.S.	5	413,769
Georgetown, P.E.I.	2	217,556
Summerside, P.E.I.	3	406,126
Charlottetown, P.E.I.	1	220,645
Montreal, Que.	6	417,076
Total	29	2,626,368

Exports of table potatoes this year have been nearly twelve times greater than during the year 1945-46 including the shipments to the United Kingdom.

Prices.—In Prince Edward Island during the months of March, April and May potato growers received approximately 86½ cents per 75 pounds of Canada No. 1 table potatoes delivered at shipping point. The United Kingdom contract price of \$1.65 per 100 pounds f.a.s. stabilized the price and an analysis of the marketing costs is presented in Table 4.

TABLE 3.—EXPORTS OF TABLE POTATOES

	1945-46	1946-47
	bus.	bus.
Prince Edward Island.....	350,585	3,395,590
New Brunswick.....	69,916	2,681,422
Total.....	420,501	6,077,012
Canada.....	553,437	6,566,836

TABLE 4.—ANALYSIS OF LOCAL MARKETING COSTS UNDER UNITED KINGDOM CONTRACT

	per 100 lbs.		per 75 lbs.	
Canada No. 1 Contract Price.....	\$	\$1.65	\$	\$1.2375
Freight.....	.14		.105	
Refer and Heat.....	.015		.0114	
Bags, Tags, Twine and Inspection.....	.20		.15	
Dealers Margin.....	.067		.05	
Handling charges from farm to shipping point.....	.0748		.0561	
Total cost of marketing.....	\$	\$.4968	\$	\$.3725
Farmer's Price at Shipping Point.....		\$1.1532		\$.8650

Between May 29 and June 12 prices in Prince Edward Island increased from \$1.00 to \$1.25 per 75 pounds and have varied from \$1.15 to \$1.35 throughout the remainder of June.

In New Brunswick prices for table potatoes delivered at shipping points averaged from 66 to 79 cents per 75 pounds during March and April and fluctuated between \$1.06 and \$1.30 throughout May and during June have been mostly between \$1.15 and \$1.35.

Reliable information on prices for seed potatoes is not yet available. However, it is well known that prices were not as satisfactory as during the 1945-46 season. Over 50 per cent of the production on the Island was seed potatoes of which a large proportion was marketed as table potatoes.

Due to the removal of the surplus potatoes from the domestic market it was not necessary for the Agricultural Prices Support Board to carry out its commitment to purchase potatoes during the spring of 1947. By May 1 potato prices were well above the support price.

Storage.—Although Canadian production this year exceeded last year's production by 20,000,000 bushels the storage holdings at June 1, 1947 were only 1,150,000 bushels more than at the same date in 1946.

TABLE 5.—POTATOES IN STORAGE AT JUNE 1ST.

	1946	1947
	(000 bushels)	
Prince Edward Island.....	487.5	1108.3
New Brunswick.....	110.5	375.4
Canada.....	938.8	2089.0

Of this excess Prince Edward Island held about 620,000 bushels and New Brunswick 265,000 bushels.

Although the prices realized for the 1946 crop of potatoes have been below the high prices prevailing since 1941 the large crop has been marketed at prices that will enable growers to continue in business. The dominion Bureau of Statistics' first estimate of the potato acreage for 1947 indicates that both Prince Edward Island and New Brunswick growers have reduced their acreage from the high figure of 1946 by about 10 per cent whereas the acreage for Canada as a whole is 97 per cent of 1946.

NOTES ON SEASONAL VARIATIONS IN THE PRODUCTION OF BUTTERFAT ON MANITOBA FARMS

H. W. TREVOR

Variation in the seasonal production of creamery butter and cheese introduces considerable inefficiency in their processing and marketing. Production from November to April is always lower than the production during the other six months of the year. For the last three years the winter production of creamery butter in Manitoba showed a decline from 31.9 per cent of total in 1944 to 30.3 per cent in 1945, and to 26.6 per cent in 1946. The winter production of cheese in Manitoba decreased from 31.1 per cent in 1944 to 26.6 per cent in 1945, and to 22.6 per cent in 1946.¹ These seasonal variations make winter overhead costs in the processing plants excessive. Creameries and cheese factories have to maintain staffs who are not quite fully employed during certain periods of the year. Plants must be built large enough to handle the peak loads of summer production, which in Manitoba runs over four million pounds of creamery butter in June and July and which declines to less than one million pounds in December. Seasonal variations in production also increase marketing costs because much of the butter produced in summer has to be stored from six to nine months before it finally reaches the consumer.

Less butterfat may be produced and shipped in winter because farm operators believe that it does not pay to produce milk during the period of barn feeding, or because farm operators with small dairy enterprises do not make the effort required to organize for winter production. Pasture is the cheapest source of feed available, but this is not the whole story. There are other considerations which should be kept in mind by the manager of a dairy herd whose purpose in keeping cows is to obtain the highest net income.

In order to determine what effect the increased share of yearly production of butterfat shipped during the six winter months has on the farm operator's labour earnings statistical data were analysed from the Manitoba Dairy Farm Survey which has been conducted jointly by the Economic Division, Dominion Department of Agriculture; the Provincial Department of Agriculture; and the University of Manitoba. The records were collected for the years of 1944 to 1946. The farms which supply the City of Winnipeg with fluid milk were not considered, because seasonal variations of milk production on these are quite small. On the other hand, farms shipping cream for churning or shipping milk to cheese factories showed considerable seasonal variations. For the purpose of the following analysis 272 records of cream and cheese milk shippers were used.

Observation of these records indicated that the farms varied considerably in the portion of total butterfat produced in winter, and that some actually produced more in winter than in summer.

The 272 records were sorted according to the percentages of butterfat shipped during the six month period beginning with November and ending with April. It was found that on 63 farms the winter shipment amounted to less than 30 per cent of the yearly delivery; on 80 farms the winter delivery was from 30

¹Source: Dominion Bureau of Statistics.

to 39 per cent; on 78 farms it was from 40 to 49 per cent; and on 51 farms the winter delivery amounted to more than one half of the yearly shipment. Average labour earnings, pounds of butterfat sold per cow, and pounds of concentrates fed per adult animal equivalent per year were calculated for each of the four groups of farms (table 1).

TABLE 1.—EFFECT OF WINTER PRODUCTION OF BUTTERFAT, MANITOBA, 1944-46

Percentage of butterfat shipped in winter	Number of farms	Average labour earnings ¹	Pounds of butterfat sold per cow per year	Pounds of concentrates fed per adult animal equivalent per year
		\$		
Less than 30.....	63	317	130	1,071
30 to 39.....	80	944	155	1,306
40 to 49.....	78	1,269	171	1,519
50 or more.....	51	1,370	178	1,590

¹ Labour earnings is the amount left for the farm operator's labour and management after all expenses have been met, including interest on investment. Labour earnings include the value of farm products used in the house.

The yearly labour earnings of the farm operator were highest in those groups of farms shipping a large percentage of their butterfat in winter. The group of farms which delivered less than 30 per cent of their yearly shipment in winter had labour earnings of only \$317.00; the group which delivered from 30 to 39 per cent of their yearly shipment of butterfat in winter had labour earnings of \$944.00; the group of farms which shipped from 40 to 49 per cent of their butterfat in winter had labour earnings of \$1,269 and for the group of farms which shipped one half or more in winter the labour earnings were \$1,370 (table 1).

The percentage of butterfat shipped in winter was not related to the size of herd. Both large and small herds were found in each of the four groups, and number of cows averaged evenly for all groups, being in the neighbourhood of ten milk cows per farm. The size of farms as measured by crop acres varied from group to group, but did not show a consistent trend in one direction. Furthermore, when the farms were sorted on crop acres the variation in labour earnings in four groups was less than that shown for a sort on percentage of butterfat shipped in winter.

The relationship of other major enterprises to winter production of butterfat was analysed. There was some relation between butterfat sold in winter and percentage of receipts from crops. However, the highest group had only 39 per cent of its receipts from crops. The variation from low to high was only 9 per cent. Therefore this relation could not account for much of the increase in labour earnings associated with increased winter production of butterfat (table 1). The relationship with crop receipts probably exists because (1) farms stressing crops have the most to gain in labour distribution from winter production, and (2) grain farms are the most likely to have grain available for winter feeding.

Receipts from hogs would not account for the difference in earnings, as the groups only varied from 18 per cent of receipts from hogs to 14 per cent and there was no consistent trend.

The producers with the highest percentages of butterfat produced in winter had the highest labour earnings. There are many reasons why this might have been expected. Some of these reasons are: (1) cows, whether dry or milking, have to be taken care of. While the costs of producing butterfat in summer in Manitoba tended to be only about one half or less of the winter costs per pound, this does not solve the problem because much of the winter cost of feeding and

housing would have to be borne whether cows are producing heavily or not; (2) though milking cows should and do get more concentrates than dry cows, the additional expense of feed is associated with higher yearly production of butterfat per cow (table 1). In this way the extra cost of feed is more than offset by the increased revenue from the larger quantity of butterfat sold. In each year of the study the group of farms having the largest percentage of butterfat shipped in the six winter months had the lowest average cost per pound of butterfat. On the other hand butterfat nearly always sells above the summer price in winter. In the five pre-war years (1935-1939) the January price for Manitoba averaged 3.4 cents above the June price;² (3) the farms which ship butterfat more evenly throughout the year must have the breeding program so organized that most cows freshen in the fall. The natural heavy flow of milk after freshening occurs during the season when pasture is getting scarce and appetite for dry hay might lag. The natural milk flow declines sometime in the spring when cows go back to pasture. Spring grazing stimulates the metabolism of the animals and milk production goes up again. If an animal freshens in the spring, the milk flow is decreasing at the time of change from pasture feeding to barn feeding. In this case the second increase in milk production does not take place and the total yearly production per animal does not compare favourably with the one which freshens in the fall.

While winter production does require some additional effort, such as more careful planning of the breeding program, providing adequate feed and perhaps shelter, there is ample evidence that these efforts are well repaid.

NOTE

The permanent Agricultural Committee of the International Labour Office will meet at Geneva, Switzerland, beginning August 4, 1947. The Committee was organized in 1937 and held its first meeting at Geneva the following year. In November, 1939, a regional meeting representing the American continents was held at Havana, Cuba.

The Committee will consider minimum wage regulations in agriculture, medical examination of children and young persons for employment in agriculture, security of employment, and general developments that have taken place in agriculture, and labour relations since the beginning of the war. In connection with security of employment, the discussion will cover a wide field including economic conditions in agriculture, unemployment insurance, employment services and similar matters.

ERRATA

A regrettable error crept into the table on *Subsidies Paid Out by the Department of Agriculture, 1946 calendar year*, appearing on page 44 of the May, 1947 issue of the *Economic Annalist*:

- (1) Total subsidy paid on milk for cheddar cheese in British Columbia should read: \$16,599.
- (2) The total on lime subsidy paid in Ontario should read: \$46,227.
- (3) The total wool subsidy paid in Nova Scotia should read: \$4,888.
- (4) The total subsidy paid in Canada should read: \$76,220,715.

In the article entitled "Use of Power Machinery in Bush Land Improvement in Northern Saskatchewan" by M. E. Andal, *Economic Annalist*, May 1947, page 34 (para. 9, line 6) Professor E. A. Hardy was quoted as estimating the life time of tractors in this type of work to be 15,000 hours. This should read 8,000 to 10,000 hours.

²Source: The Dominion Bureau of Statistics.

HORSE CO-OPERATIVE MARKETING ASSOCIATION LIMITED**W. F. CHOWN**

The development of the Horse Co-operative Marketing Association has been one of the most notable events in the history of agricultural co-operation in Canada.

As World War II progressed and the shortage of food became more and more apparent it was realized that the surplus horses of Western Canada were using grazing land that might better be used for cattle and sheep and that these horses were a potential source of food and other needed products. During March 1944 meetings were held at several points in South-western Saskatchewan which culminated in a large meeting in Swift Current in April. A Charter was applied for and obtained and a co-operative association organized for the purpose of conserving the grazing and pasture lands of Western Canada by finding a market for surplus horses with the best possible returns to the producer and where the producer would participate in the profit of the undertaking.

At the time of organization it was not known just how these objectives could be attained and some months' study and investigation followed during which the support of the Saskatchewan and Dominion Governments was obtained. Markets were sought and methods of financing explored.

In May, 1945, a contract was entered into to supply the Government of Belgium with 10,000 tons of pickled horse meat and with various by-products. On June 11, 1945, the co-operative was re-organized under its present name. An unused power plant was acquired for a nominal sum from the City of Swift Current and a contract was entered into to have this converted into a horse meat packing plant. On July 1, 1945, a small horse meat plant at Edmonton was purchased as a going concern and a contract entered into to enlarge this plant and convert it into a plant in which horse meat could be produced for human consumption. Construction plans provided for the canning of horse meat. In January, 1946 a contract was entered into with the Canadian Commercial Corporation to supply 7,000 tons of canned horse meat and gravy to UNRRA. The difficulties encountered in obtaining construction materials and plant equipment were numerous and difficulties in obtaining the necessary money were no less onerous. The first horses were killed at Swift Current on October 19, 1945. Production on the Belgium contract at Edmonton commenced on March 5, 1946. The cannery at Swift Current commenced operations in March, 1946 and came into effective production in May at which time shipments of meat from Edmonton were commenced. The cannery did not reach maximum production until the fall of 1946 due to delay in obtaining mechanical can filling equipment.

Horses have been bought by grade with an initial payment of 2 cents being paid for the top grade. At first this was paid on a delivered basis with the Association absorbing the freight in excess of 25 cents per 100 pounds. This payment is now based on point of delivery and an equalization dividend has been declared to put all horses delivered since the opening of the plant on the same basis. At the end of 1946 an additional payment of .6 cents per pound was declared and allocated but has not been paid out in cash yet.

At December 31, 1946 the investment in fixed assets at both plants cost \$720,000 of which about \$90,000 has been charged to operations leaving \$630,000 to be carried forward and charged against future operations.

Some funds were raised at the start by subscriptions to capital stock at \$1.00 per share and by loans raised from the members. Money was also obtained by means of bank loans guaranteed by the Governments of Belgium and Saskatchewan and by advances from the Canadian Commercial Corporation. Funds for working capital were obtained by borrowing under Section 88 of the Bank Act. From the initial payment on each horse has been deducted \$1.00

for capital stock and \$3.00 which has been credited to members' reserve fund. The 1946 equalization interim and final payment allotments have not yet been paid out and these with unallocated earnings now bring the members' equity in the Association to more than \$1,000,000.

DELEGATION TO FAO CONFERENCE IN GENEVA

The Canadian delegation to the third Session of the Conference of the Food and Agriculture Organization of the United Nations which will open in Geneva, August 25, will be headed by The Right Honourable J. G. Gardiner, Minister of Agriculture with Dr. G. S. H. Barton, Deputy Minister of Agriculture as alternate. Members of the delegation include Mr. J. A. Chapdelaine, First Secretary, Canadian Embassy, Paris, representing the Department of External Affairs; Mr. J. P. Manion, Canadian Commercial Representative at Rome, representing the Department of Trade and Commerce; Dr. G. D. W. Cameron, Deputy Minister of National Health and Welfare; Dr. D. G. Wilder, Biologist, Atlantic Biological Station, Department of Fisheries; Dr. E. S. Archibald, Director, Experimental Farms Service, and Dr. J. F. Booth, Associate Director, Marketing Service, Agricultural Economics, Department of Agriculture; Mr. C. J. Morrow, Fisheries Council of Canada, Mr. H. H. Hannam, President, Canadian Federation of Agriculture; Dr. S. C. Hudson, Principal Economist, Economics Division, Department of Agriculture, will serve as Secretary of the delegation.

Copies of the Conference Agenda have been sent to the 47 member governments of FAO.

It is suggested that the Conference should start its Commission work as soon as it has completed the necessary formal procedure matters and implement the recommendation of the Executive Committee that three Commissions be established—Commission I, to be known as "The Commission on the World Food and Agriculture Situation"; Commission II, or "The Commission on Technical Activities of FAO", and Commission III, or "The Commission on Constitutional, Administrative, and Financial Questions".

An important new item of business, which in future will be a feature of the Annual Conference, will be a review of the world situation and outlook at which the national programs and plans relating to food, agriculture, forestry, and fisheries will be discussed. Material for the review is being drawn from reports submitted by governments and from other available sources, and is being analysed by the technical divisions of FAO.

This Annual Program Review is expected to be the means by which FAO may carry out its basic aims of increasing production and consumption of food and agricultural products, and raising living levels of the people of the world.

The Conference will also consider the recommendation to establish a Council of FAO, or World Food Council, the proposal being that the Council be established within FAO and consist of representatives of 18 member governments.

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THE ECONOMIC SITUATION

Decontrol.—Although the policy of gradual removal of wartime restrictions was inaugurated 21 months ago, the majority of controls was kept in operation until the end of 1946. In the past nine months, however, the transition from wartime controls to a free market has been accelerated.

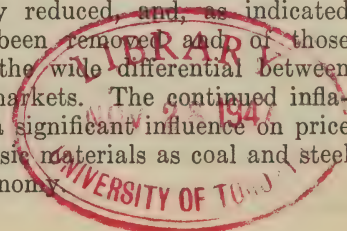
On September 15, 1947, the Wartime Prices and Trade Board removed the price ceiling from thousands of individual goods and services still under control.

All subsidy payments on items that were decontrolled were discontinued. These include domestic subsidies on flour and coarse grains, and the import subsidies on cotton, hides and leather, corn and soya beans.

The principal items remaining under control (after October 19) are as follows: sugar and edible molasses; dried imported fruits; the more important oils and fats; wheat; flaxseed; rapeseed; sunflower seed; some soap and soap based detergents of all kinds. There are no changes in rental or eviction controls.

At the same time, most of the supply and distribution orders covering the items being decontrolled are also being revoked. These include: limitations on the quantity of flour which could be supplied from any mill to the domestic market; requirements respecting price tags and labelling; the standardization of packaging; restrictions on the weight and type of book, writing and specialty papers; the canning of pork and beans; the control on the varieties, types and qualities of paper products which could be manufactured; the limitation on the varieties of bakery products and the prohibition of the sale of sliced bread.

During the past 21 months, but most markedly in the course of 1947, along with decontrol, a readjustment of the price structure to the realities of the post-war situation has been taking place. The majority of subsidies have been eliminated, while others have been greatly reduced, and, as indicated previously, practically all price ceilings have been removed and of those remaining, most have been raised to cut down the wide differential between domestic prices and those obtainable in foreign markets. The continued inflationary pressures in the United States also exert a significant influence on price movements in Canada as higher prices for such basic materials as coal and steel spread through related sectors of the Canadian economy.



ANNUAL AND MONTHLY INDEX NUMBERS

WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES (a)

Year	Wholesale Prices 1935-39=100			Farm Prices of Agricultural Products 1935-39=100	Commodities and Services used by Farmers 1935-39=100		Cost of Living 1935-39=100	
	Farm Products (b)	Field Products (c)	Animal Products (d)		Eight Factors (f)	Eleven Factors (g)	Farm Living Costs (h)	Urban Living Costs (i)
1913.							79.6	79.1
1914.							82.0	79.7
1915.							86.3	80.7
1916.							93.6	87.0
1917.							111.6	102.4
1918.							131.4	115.6
1919.							143.0	126.5
1920.							170.7	145.4
1921.							139.5	129.9
1922.					126.9	133.2	127.5	120.4
1923.					118.7	128.7	127.9	120.7
1924.					122.5	132.6	125.1	118.8
1925.					124.3	131.8	123.6	119.8
1926.	144.4	158.5	130.2		120.6	129.3	120.9	121.8
1927.	138.6	149.4	127.8		120.9	130.1	119.5	119.9
1928.	136.3	134.3	138.2		119.4	128.2	118.3	120.5
1929.	140.8	137.2	144.4		118.4	127.5	117.4	121.7
1930.	119.5	105.8	133.3		105.7	116.3	113.7	120.8
1931.	78.9	65.0	92.7		91.8	100.8	103.7	109.1
1932.	65.5	60.4	70.5		88.7	93.4	97.7	99.0
1933.	69.3	69.3	69.2		88.4	90.0	95.7	94.4
1934.	83.5	80.5	86.5		96.8	96.0	97.8	95.6
1935.	89.2	84.4	94.1	88.0	95.6	96.0	97.9	96.2
1936.	97.9	102.2	93.7	96.9	98.4	98.0	98.3	98.1
1937.	117.4	128.9	106.0	119.7	108.5	105.4	102.9	101.2
1938.	102.9	100.9	104.8	105.0	101.1	101.5	102.0	102.2
1939.	92.6	83.7	101.5	91.8	96.1	99.1	99.5	101.5
1940.	96.1	85.4	106.7	96.8	102.3	105.8	108.6	105.6
1941.	106.6	88.9	124.4	110.2	108.2	114.2	114.2	111.7
1942.	127.1	109.7	144.6	133.1	119.7	128.1	119.2	117.0
1943.	145.4	129.0	161.8	157.8	122.4	136.0	121.7	118.4
1944.	155.3	144.5	166.1	172.3	125.7	139.9	122.8	118.9
1945.	160.3	150.4	170.2	177.3	125.5	142.6	123.2	119.5
1946.	165.0	148.8	181.2	184.1	127.7	145.4	127.1	123.6
1946								
June.	168.8	152.2	185.4	187.0				123.6
July.	170.7	156.3	185.1	188.4				125.1
Aug.	167.1	150.5	183.7	187.7	128.8	149.0	130.5	125.6
Sept.	164.5	145.8	183.1	184.6				125.5
Oct.	164.2	144.3	184.2	184.1				126.8
Nov.	164.5	143.7	185.3	184.8				127.1
Dec.	165.6	143.6	187.7	185.5				127.1
1947								
Jan.	168.0	143.7	192.3	186.7	130.4	146.7	132.2	127.0
Feb.	169.0	144.3	193.8	187.0				127.8
Mar.	170.0	145.2	194.8	189.4				128.9
Apr.	171.3	145.4	197.2	190.5	138.5	156.8	136.1	130.6
May.	174.0	150.2	197.8	192.2				133.1
June.	175.7	151.6	199.8	195.0				134.9
July.	177.8	158.1	197.5	195.0				135.9
Aug.	178.8	157.8	199.8	196.7	145.8	164.2	146.5	136.6

(a) All index data computed by Dominion Bureau of Statistics.

(b) Canada. Dominion Bureau of Statistics, Prices Branch. *Wholesale Price Index Numbers of Canadian Farm Products*. (Mimeo). Ottawa. Aug. 1947, and *Prices and Price Indexes*. Aug., 1947. Wholesale prices of products of Canadian farms.

(c) Ibid (b). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid (b). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agricultural Division. *Index Numbers of Farm Prices of Agricultural Products*. (Mimeo). Ottawa. Monthly.(f) Canada. Dominion Bureau of Statistics, Prices Branch. *Price Index Numbers of Commodities and Services Used by Farmers*. (Mimeo). Ottawa. Jan., Apr. and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) Ibid (f).

(i) Canada. Dominion Bureau of Statistics, Prices Branch. *Prices and Price Indexes, 1913-43*. Ottawa. 1945, and (Mimeo) Aug., 1947.

Domestic costs of production and import prices of raw materials, components and finished goods alike, had risen sharply since the system of wartime controls was inaugurated, and, with the removal of restrictions, these price-raising factors have been reflected in the cost-of-living.

Cost-of-Living.—The removal of more goods and services from under the price ceiling and the cessation of payment of additional subsidies, will likely result in a marked increase in the cost-of-living in urban centres. Between August 1, 1939, and August 1, 1947, the increase in the cost-of-living amounted to 35.5 per cent. The greatest increases were 60.6 per cent for food, 45.5 per cent for clothing, and 43.7 per cent for home furnishings and services.

On the base 1935-39=100, the Dominion Bureau of Statistics cost-of-living index rose 2.8 points to 139.4 between August 1 and September 2, 1947. This was the sharpest monthly increase since May, 1920. Substantial increases in prices for foods, clothing and homefurnishings and services were the principal supporting factors. A gain of 4.7 points to 165.3 for the food series reflected, among other items, advances for butter, eggs, meats, tea, coffee, lemons and oranges, which outweighed a seasonal decline in potatoes. The clothing group rose 6.5 points to 152.0, due to increases concentrated mainly in men's and women's wear, notably overcoats, topcoats and suits. In the homefurnishings and services group, a gain of 3.7 points to 147.4 was supported principally by further substantial advances in furniture, floor coverings and homefurnishings. Scattered increases for coal and coke lifted the fuel and light group 2.5 points to 121.1 while higher health and personal care costs moved the miscellaneous group of items up 0.3 to 117.5. Rentals at 117.8 was the only group remaining unchanged.

Income and Employment.—Total wages, salaries and supplementary income, in the first half of 1947, are estimated at \$2.8 billion, an increase of \$410 million or 17 per cent over the same period of last year, according to a Dominion Bureau of Statistics' release.

More than half the increase in the first six months of this year occurred in manufacturing and trade, the two groups accounting for \$219 million of the difference of \$410 million. On a relative basis, the greatest increases occurred in logging, water transport and construction, where income in the first half of 1947 was from 30 to 40 per cent higher than in the first half of 1946. Agriculture showed a decrease of almost 30 per cent which was due entirely to a reduction in the number of workers.

The number of paid workers employed in Canada increased by about four per cent between June 1, 1946, and June 1 this year. This indicates that the average income of wage earners has not increased as much as total income. Furthermore, the cost-of-living index rose by about nine per cent, so that the rise in prices, to a considerable extent, offset the increase in workers' incomes.

The seasonal expansion of Canadian industry continues to cut into the supply of labour on hand. Jobs available at Employment Service offices during September, 1947 outnumbered applicants for work by 33,000. There were 84,000 unplaced applicants registered with the National Employment Service at September 11, 1947. This is the most extensive labour shortage which Canada has experienced since the end of the war. Agriculture, transportation, manufacturing and construction industries are absorbing all available workers.

Retail Sales.—While retail prices of a number of consumer goods have been rising sharply during the past year, no strong consumer resistance has developed. In 14 lines of the retail trade, mainly clothing, food, and household goods, the August, 1947 sales were four per cent above the August, 1946 index. The general index of sales in the first eight months of 1947 stood at nine per cent above that for the same period a year ago. The index of retail sales in country general stores stood at 228.6 in August, 1947 (1935-39=100), as compared with 131.6 in August, 1941.

Exports and Imports.—During the eight months of 1947, total exports of Canadian produce to all countries increased by 20 per cent over the same period in 1946. The increase was greatest in wood, wood products and paper, and the non-ferrous metals and their products. Exports of animal and animal products declined by 14 per cent but the exports of agricultural and vegetable products (wheat, vegetables and fruit) increased by 27 per cent. The expansion in exports to the United Kingdom was by 29 per cent. Here, again, the largest increases were in the wood and paper products and non-ferrous metals. The increase in the value of exports to the United States was only 18 per cent.

Total domestic exports for the January-August, 1947 period were valued at \$1,786 million. Total imports for consumption during the same period amounted to \$1,688 million. Exports to the United States during this period were worth \$505.6 million. Imports from the United States amounted to \$1,306 million. These two figures summarize Canada's U.S. dollar position.

Agricultural Production.—Total acreage planted to field crops (ten) in 1947 amounted to 71.9 million acres, an increase of 1.2 million acres over 1946. However, the comparison of total production for the two years shows a decline in total bushels from 1.5 billion in 1946 to 1.2 billion in 1947. The decrease in total output was mainly due to poorer weather conditions resulting in lower yield per acre. However, the acreage and yield of hay crops increased in 1947 over 1946. But such crops as potatoes, turnips and sugar beets showed a considerable decline. Canada's major crop, wheat, is estimated at 352 million bushels. This is a reduction of 68 million as compared with the previous year. The output of flaxseed showed a remarkable increase in acreage, and total production in 1947 was 11.7 million bushels, nearly double that of 1946.

Hog numbers are again on the increase in Canada. On June 1, 1947, numbers of hogs on farms in Canada totalled 5.5 million as compared with 4.9 million the year earlier. All provinces showed an increase, the most important occurring in Ontario and Quebec. Cattle numbers increased slightly but the sheep population declined by eight per cent.

The labour management dispute in the meat packing industry has reduced meat output considerably. All packing plants under Federal inspection in Western Canada were shut down, and a number of the large plants in Eastern Canada were also closed. This has resulted in the carrying of unduly large numbers of live stock on farms during the season of normally heavy marketings, and in a sharp decrease in the movement of meat products to the United Kingdom.

Agricultural Prices.—Prices received by farmers for their agricultural products have been increasing steadily since November, 1946. The index number of prices received in August, 1947, for all products at 196.7 (1935-39=100), was 9.0 points or nearly five per cent above the index number of 187.7 a year ago. Higher prices for live stock and dairy products were chiefly responsible for the increases in the index number.

THE GENEVA CONFERENCE OF THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

S. C. HUDSON¹

The Third Session of the Conference of the Food and Agriculture Organization of the United Nations was held in the Palais des Nations at Geneva from August 25 to September 11, 1947. While the Quebec and Copenhagen FAO Conferences were concerned largely with the organizational aspects of FAO the agenda of the Third Session of the Conference was cast largely by the Report of the Preparatory Commission on World Food Proposals.² The Conference considered the technical activities of FAO, reviewed the world food and agricultural situation, examined the recommendations of the Preparatory Commission and implemented the necessary constitutional amendments to provide for a Council of FAO.

Acceptance by the Conference of the applications for membership of Austria, Finland, Siam, Pakistan and Burma increased the Organization's membership to fifty-three nations. Representatives of member nations together with observers from six non-member nations and twenty-seven international organizations and authorities participated in the Conference.

The World Food Crisis.—The Director-General, Sir John Boyd Orr, in addressing the Conference on the present world food situation, stated in part,

"The Report placed before you to-day raises problems of the utmost gravity. There is the continuing world food shortage. In Europe next winter and spring, three years after the end of hostilities, there will be millions who will be worse fed than they were during the war. In Asia, where hunger and malnutrition have been so long the lot of the masses of the people, there is little hope this year of any substantial improvement in their condition. This partial famine, this hunger, affects half the population of the world, and is bringing untold misery and suffering upon our fellow men. Hunger reduces human beings to a sub-human level. The danger is that it is continuing so long that the conscience of the world will be blunted, people will regard it as a normal state of affairs, and nations and private organizations will slacken off their efforts to alleviate this misery. In the immediate future, there is a danger of another kind. The war devastated countries must and are making every effort to increase food production. Lacking purchasing power they will be forced to become as nearly self-sufficient in food as is possible. This may cause a quite sudden appearance of unmarketable surpluses in countries which in their generosity increased food production to relieve the world shortage. Unless measures are taken early to deal with these, to anticipate them, to take measures for their disposal, we shall be back again to the chaotic conditions of the late 20's, which made such a great contribution to the economic crisis of 1929. The economic structure of the world, shattered as it has been by the war, will not stand another such economic crisis".

The Conference found that the serious food deficit which had been forecast previously had been greatly accentuated as the result of adverse weather and deterioration of crop conditions both in Europe and North America. It was estimated that while thirty eight million metric tons of bread grain imports will be needed by the deficit countries to continue even the very low cereal rations of the past crop year, a maximum of twenty nine million tons will be available for export from the surplus producing countries unless extraordinary new efforts are made. The Conference, therefore, made recommendations to Governments for action designed to ensure the optimum utilization of the existing and prospective supplies of food, and for immediate increases in food production through better use of available supplies of fertilizers and agricultural machinery.

¹ Secretary of the Canadian Delegation.

² For an outline of the Report of the FAO Preparatory Commission on World Food Proposals see *Economic Annalist*, Vol. XVII, No. 2:28. 1947.

International Allocation.—The Conference recommended that the functions of the International Emergency Food Council be taken over by the FAO and that during the period of acute food and feed shortages the commodity arrangements of the IEFEC be continued.

The World Food Council.—The Copenhagen Conference of FAO having endorsed the general objectives underlying the Director-General's proposals for a World Food Board gave to the Preparatory Commission on World Food Proposals the task of making specific recommendations for the carrying out of those objectives. One of the principal recommendations of the Commission was for the establishment of a Council of the Food and Agriculture Organization. This recommendation was approved and implemented by the Geneva Conference. The newly established Council, which is composed of representatives of eighteen member Governments, will act as the executive body of the Organization between the annual sessions of the Conference, keep the world food and agriculture situation and intergovernmental commodity arrangements under constant review, and stimulate action by and cooperation among governments. The following member Governments were elected to membership of the Council by the Conference; for one year, Australia, Denmark, Egypt, France, India, Mexico; for two years, China, Cuba, Czechoslovakia, the Netherlands, the Philippines and the United Kingdom; for three years, Brazil, Canada, Chile, Italy, South Africa and the United States.

Annual World Review of Food and Agriculture.—Arrangements were made that an annual world review of national and international programs in food and agriculture should be an integral part of future FAO Conferences. Such an annual review will enable responsible officials of member nations (a) to consider how well their respective national programs fit together to form a coherent world picture and (b) to form an appreciation of what changes might be needed in national programs or international commodity operations to make them more consistent with one another.

Technical Activities of FAO.—The Conference reviewed the technical work of FAO. Since the first session of the Conference at Quebec in 1945 five technical divisions have been set up covering agriculture, nutrition, fisheries, forestry and economics. Satisfaction was expressed with the work already accomplished and that which is planned. It was recommended that a review of the technical activities should become a regular feature of the annual Conference of FAO. Consideration was also given to the preparations for a World Census of Agriculture in 1950 and general support to this undertaking was given by member governments.

Regional Offices.—The desirability of establishing regional FAO offices was considered by the Conference. As a result of these discussions it was decided that regional offices should be set up in Europe, the near East, Asia and Latin America.

Sales in Canada of farm implements and equipment, mainly at wholesale prices, amounted to \$81,372,195 in 1946, an increase of 26·6 per cent over the 1945 figure of \$64,293,216. This was the highest volume of sales since the Dominion Bureau of Statistics started this series of reports in 1936. These figures relate to the sale of farm machinery and equipment only and do not include the sale of parts, binder twine, motor trucks or used equipment of any kind. Sales of repair parts amounted to \$20,790,007 in 1946, an 11 per cent increase over the \$18,734,009 reported for the previous year.

Taking into account the average mark-up of 20·5 per cent by dealers and agents for farm implements and machinery, and 31·7 per cent for repair parts, Canadian farmers spent approximately \$98,050,000 for new farm machinery and equipment and \$27,380,439 for repair parts sold in 1946.

PERMANENT AGRICULTURAL COMMITTEE OF THE INTERNATIONAL LABOUR OFFICE RECOMMENDS PROGRAM IN RESPECT OF AGRICULTURAL LABOUR

J. F. BOOTH¹

Under the title "Security of Employment and Occupation in Agriculture" the Permanent Agricultural Committee of the International Labour Organization devoted much time at its second session at Geneva, August 4-9, 1947, to an exploratory examination of the economic and social problems of the people on the land,—whether they be paid employees or farm operators. It was recognized that about 85 per cent of those who work on the land are self employed; that because of the close relationship between employee and employer in agriculture there is less distinction between those engaged in the industry so far as economic and social conditions are concerned than prevails in urban industry; and that if an improvement is to be had in the wages of employed workers there must be an improvement in the income of farm operators. Its discussion on this point led the Committee to the conclusion that much more information is needed if the International Labour Office is to discharge adequately its responsibility in respect of agricultural labour.

The Committee, accordingly, recommended that the Governing Body instruct the International Labour Office to extend its research program to include the following matters:

- (a) the special problems of the agricultural populations of the undeveloped countries;
- (b) the problems associated with surplus farm population and rural-urban migration;
- (c) housing conditions of employed workers;
- (d) the effect of an unstable economy or of full employment on labour supply;
- (e) the changes in newer countries in respect of the farm labour force;
- (f) the problem of the organization and administration of employment and recruitment services for farm labour;
- (g) seasonal employment in agriculture;
- (h) migratory labour;
- (i) the application and effect of social legislation in agriculture;
- (j) the effect of different systems of land ownership and tenancy on the people engaged in agriculture.

The Committee recognized that certain of the matters referred to in this program were of concern to other international bodies, particularly the Food and Agriculture Organization, and therefore urged that suitable collaboration and co-ordination be arranged between the different bodies in dealing with these matters.

The Committee also dealt with several matters that were introduced at its first meeting and which were referred to the office for further study. One of these concerned hours of work in agriculture. On this the Committee recommended further study. Similar treatment was accorded suggestions dealing with vocational education in agriculture and concerning medical examination for fitness for employment of children and young persons in agriculture. The latter question had been the subject of a resolution at the International Labour Conference.

Matters on which the Committee recommended international action, and to that end, consideration by the International Labour Conference, included: holidays with pay in agriculture; extension of social security to agricultural populations; and minimum wage regulation in agriculture.

¹ Member of Committee.

The Permanent Agricultural Committee was created in 1937 to advise the International Labour Office on matters relating to agricultural labour. Its first meeting was held at Geneva in 1938. A second meeting scheduled for 1939 was cancelled due to the outbreak of war. In its stead a regional meeting was held at Havana.

The membership of the Committee consists of: (a) six representatives of the International Labour Organization Governing Body (government group, employers group, workers group), (b) a maximum of twelve experts selected for their knowledge of economic and social conditions relating to agriculture and agricultural labour (c) representatives of international institutions and organizations (United Nations, Food and Agriculture Organization and federations of agricultural producers and agricultural workers, (d) members *ad hoc* invited by the officers of the Governing Body to attend meetings.

The membership of the Committee is representative of all geographical areas of the world and of many countries but members serve as individuals or as representatives of organizations rather than as spokesmen for governments.

SIXTH INTERNATIONAL CONFERENCE OF AGRICULTURAL ECONOMISTS

J. COKE

The Sixth International Conference of Agricultural Economists was held at the Senior School, Dartington Hall, Totnes, Devon, England, August 28th to September 6th.

This was not planned as a full conference of the 359 members but more than 85 interested persons were present. One of the main purposes was to make plans for the future. Representatives from 24 countries were in attendance. The largest delegations were from the United States and United Kingdom, each having 20. In addition, there were some visitors not listed as delegates.

The members were welcomed by the Earl of Huntingdon, Joint Parliamentary Secretary to the Ministry of Agriculture; Earl Fortesque, Lord Lieutenant of Devon County; W. E. Phillips, Mayor of Totnes, and Mrs. Dorothy Elmhirst. The President in opening the Conference referred to the beginnings of the conference when the idea of a conference of agricultural economists was discussed with and approved by C. S. Orwin, then Director of the Agricultural Institute of Oxford; the late Dr. G. F. Warren of Cornell University and the late Dr. Carl Ladd, also of Cornell. The President said the idea was actually born when Dr. Ladd was on sabbatical leave in England and materialized with the first conference at Dartington Hall in 1929. The second conference was held at Cornell University in 1930; the third at Bad Eilsen, Germany in 1934; the fourth at St. Andrews University, St. Andrews, Scotland, in 1936, and the fifth at Macdonald College, Quebec, in 1938. It seemed appropriate that the first post-war conference should be held at Dartington Hall. President L. K. Elmhirst said the purpose of the Conference was to provide an opportunity for those engaged in research and teaching agricultural economics to meet and exchange ideas on current international economic problems and methods and results of research.

There were four main papers for which a day was set aside. The first of these was entitled *The Movement of Farm Population*. This discussion was opened by J. P. Maxton of the Institute of Agrarian Affairs, Oxford.

The second paper, *The Flexibility of Land Tenure, Capital and Credit Systems to Meet Technical, Economic and Social Development* was read by R. R. Renne, President, Montana State College, Bozman, Montana.

The third main paper dealt with *The Place of State Buying and Selling in Free World Trading*. This discussion was opened by Mr. T. Gilpin, Economics Affairs Officer, United Nations.

The fourth discussion centred around *The Human Satisfaction of Rural Work and Rural Living*. Dr. A. W. Ashby, Director, Agricultural Economics Research Institute, Oxford, read the opening paper.

In addition to these main discussions, a series of shorter papers was presented on a wide range of subjects from work simplification, to the conflict of public and private interest in land use.

Mr. J. Scott-Watson, Director of the National Advisory Agricultural Service, discussed the development of Britain's food crisis and the steps planned to meet the situation.

Visits to nearby farms were made in order that the visitors to the United Kingdom might see at first hand the methods of farming practised. Following the conference about 30 of the delegates made a tour to the Royal Agricultural College, Cirencester, the University of Reading, the Agricultural Economics Research Institute at Oxford, Cambridge University and Rothamstead Experimental Station.

Canadian representatives to the conference were J. Coke, Economics Division, Department of Agriculture, and Roy A. Blake, Commercial Secretary (Agricultural Specialist), Canada House, London, England.

The seventh conference, which will be a full conference, is to be held in Hungary in 1949 but Czechoslovakia was named as an alternate. The President and executive were given power to make any other arrangement for the next conference that might be necessary.

Mr. L. K. Elmhirst, Dartington Hall, was re-elected President. Dr. E. C. Young, Dean of the Graduate School, Purdue University, Lafayette and Professor G. Minderhoud, Landbouwhoogeschool, Wageningen, Netherlands, were named Vice-Presidents.

The proceedings will be printed and it is hoped they will be available early in the new year.

THE ECONOMIC ORGANIZATION OF FARMS IN SOUTH-WESTERN MANITOBA

Sol Sinclair¹ and O. P. Blach

The actual experiences of 216 farm operators, as disclosed by farm business records obtained in the summer of 1946, form the basis for the following description of the economics of farm organization in south-western Manitoba. The information was obtained through a farm business survey conducted jointly by the Economics Division, Marketing Service, Dominion Department of Agriculture and the Department of Political Economy, University of Manitoba. A record of the entire farm business for the year June 1, 1945 to May 31, 1946, was obtained from each of these farmers. The sample of farms obtained was randomized along three main strata, namely, soil type, type of farming and size of farm in total acres.

The locale for the study was the extreme south-western portion of the Province of Manitoba lying mostly in Manitoba Crop District One. This area is one of the earlier settled parts of the Province. It is situated on the transition between the Black Earths to the north and the Plains Brown Soils to the south. The farmers have experienced over the years, large fluctuations in farm income mainly because crop yields reflected the high variability in annual precipitation. The present farm organization thus may be regarded as an attempt by the farmers studied, to adjust their farm activities to prevailing natural environment and economic situations.

¹ Associate Professor of Agricultural Economics, Department of Political Economy and Political Science, University of Manitoba.

Type of Farming.—The farms studied are located in three separate districts on three different soil associations: (1) The Reston district on Oxbow loams to heavy loams; (2) The Melita district on Souris light fine sandy loams to fine loams; (3) The Boissevain district on the Waskada loams to heavy clay.¹ Although there is a difference between the soil types in the three districts, other natural factors combined with economic conditions to create considerable uniformity in the type of farming followed in the three districts.

Crop sales from the current crop year provided over half the farm cash receipts for all the farms studied. Wheat constituted the largest single source of income. Cash income from livestock comprised about one-fifth of the total cash intake, the largest portion coming from cattle sales. Cash receipts from hogs was relatively low (averaging \$163 per farm for all farms in the area).

Grain crops of the different types were produced for sale on almost all the farms studied; this was not the situation in respect to livestock. Of the 216 farms studied, 194 sold cattle and 120 had a cash income from the sale of hogs. At Melita and Boissevain about 93 per cent of the farmers sold cattle during the year while at Reston only 84 per cent of the farmers had cattle sales. In respect to receipts from hogs, Melita was highest with 56 per cent of the farmers selling hogs (with an average value of \$407 per farm). At Reston 65 per cent of the farmers sold hogs (valued at \$252 per farm) and at Boissevain 46 per cent of the farmers sold hogs (averaging \$218 per farm). Cash receipts from the sale of farm produce² was fairly uniform throughout, amounting to \$285 per farm at Boissevain, and \$268 at both Melita and Reston.

Land Utilization.—The total area per farm averaged 547 acres at Reston, 529 acres at Melita and 471 acres at Boissevain. (For details see Table 2). The total improved acreage per farm was highest at Melita. Grain crops were grown on all farms studied, with wheat occupying the largest acreage in crop, barley was second in terms of acreage seeded, and oats followed very closely. At Reston, flax assumed some importance in land use. Forty per cent of the farmers there produced flax with an average of 52 acres per farm in this crop. At Melita, 29 per cent of the farmers averaged 36 acres of flax per farm while at Boissevain 14 per cent of them grew flax averaging 55 acres per farm. It is interesting to note that 30 per cent of the improved land was in summerfallow. This is equal to the acreage seeded to wheat and suggests the tendency for farmers to seed their most important cash crop on summerfallow so as to minimize the effects of drought.

Livestock Distribution.—All the farms studied had some livestock. Of the 216 farms, 211 raised cattle and 140 kept hogs. All but seven farmers had some horses used entirely or partially for farm power. Poultry, raised primarily to provide eggs and meat for home consumption was found on most farms. Very few farmers raised any sheep.

In terms of animal units the total per farm for all farms studied was 28.5 animal units. This was distributed as follows, cattle 18.5; horses 7.4; hogs 1.7; and other livestock, mainly poultry, 0.9.

The largest number of farm animals was found on farms in the Melita district. These averaged 30 animal units per farm as compared with 29.5 animal units at Reston and 26.2 at Boissevain.

Farm Capital.—The average investment in farm capital was \$11,062 per farm for all the farms studied. This was distributed as follows: real estate \$5,122; livestock \$2,264; machinery and equipment \$2,858; feed, seed and supplies \$818. On a percentage basis, the investment in real estate constituted

¹ For a description of these soils see Ellis, J. H., & Shafer, L. H. *Reconnaissance Soil Survey, South-western Manitoba*. Soils Report No. 3, Manitoba Department of Agriculture.

² Milk, cream, butter, eggs, and garden vegetables.

TABLE 1. TYPE OF FARMING: SOURCE OF FARM CASH RECEIPTS AND AS A PERCENTAGE OF TOTAL FARM CASH RECEIPTS, 1945-46

—	Reston		Melita		Boissevain		All farms	
No. of Farms	71		73		72		216	
	Ave. per farm	P.c. of total	Ave. per farm	P.c. of total	Ave. per farm	P.c. of total	Ave. per farm	P.c. of total
	\$		\$		\$		\$	
Wheat.....	1,345	33.6	1,273	32.7	1,272	34.2	1,297	33.5
Other Crops.....	1,211	30.3	838	21.5	921	24.7	990	25.5
Cattle.....	506	12.7	586	15.0	647	17.4	580	15.0
Hogs.....	163	4.1	228	5.9	100	2.7	163	4.2
All Other Sources (a).....	773	19.3	971	24.9	782	21.0	842	21.8
Total.....	3,998	100.0	3,896	100.0	3,722	100.0	3,872	100.0

(a) Includes previous year's crop sold currently.

TABLE 2. UTILIZATION OF IMPROVED LAND PER FARM, 1945-46

—	Reston		Melita		Boissevain		All farms	
No. of Farms	71		73		72		216	
Land Use	Acres farm	P.c. of total	Acres farm	P.c. of total	Acres farm	P.c. of total	Acres farm	P.c. of total
Wheat.....	96	26.9	119	31.7	111	30.2	109	29.6
Oats.....	49	13.7	71	18.9	52	14.2	57	15.6
Barley.....	63	17.6	40	10.7	80	21.8	61	16.7
Flax.....	21	5.9	10	2.7	8	2.2	13	3.6
Other Crops.....	12	3.4	26	6.9	6	1.6	15	3.9
Summerfallow.....	116	32.5	109	29.1	110	30.0	112	30.6
Total.....	357	100.0	375	100.0	367	100.0	367	100.0

46 per cent of the total investment; 20 per cent was in livestock; 26 per cent in machinery and equipment; and 8 per cent in feed, seed and supplies. This distribution of investment approximated closely the investment in these factors on the farms at Reston and Melita, but differed for farms at Boissevain. In this district investment in real estate comprised 53 per cent of the total investment, with 18 per cent in livestock, 23 per cent in machinery and equipment, and 6 per cent in feed, seed and supplies.

There were only 141 farm operators in the group that owned real estate, while all of the 216 farmers in the area had the other types of investments. Thus, when classified on the basis of those farmers having the investment, it was found that the average investment per farm in the different forms of capital except real estate, was fairly uniform for all three districts. At Boissevain the value of real estate per owner operator was \$11,194; at Reston it was \$6,445; and at Melita it was \$6,280.

Financial Progress.—While some of the farmers have been operating the present farm for a long time, 67 per cent of the farmers have commenced operating the present farm within the last fifteen years. For all the farms studied, the average number of years the present farm has been operated by the present operator is 13.1 years. Farmers at Boissevain operated the present farm an average period of 13.8 years while at Melita and Reston the period was 12.8 and 12.7 years respectively. The present overall net worth is \$13,895 per farmer, representing an average increase in net worth per farm of \$713 per year as a result of income from all sources. When calculated on the basis of income from farm activities only, the average increase in net worth per farm was \$600

per year. This was highest for farms at Boissevain with an average net worth increase per farm of \$690 per year. At Reston this amounted to \$558 and at Melita it was \$553 per year.

Farm Business Summary.—Table 3 presents the farm business summary for the farms by districts, and for all the farms as a group.

For the year under review, Melita farmers had the highest labour earnings, and Boissevain farmers averaged lowest. The range for all the farms was from a low of minus \$1,512 on a farm at Melita to a high of \$6,643 on a farm at Reston; in each case the farm was 640 acres in size.

Cash receipts were highest on the Reston farms with \$3,995 per farm. At Melita cash receipts were \$3,895 and at Boissevain they amounted to \$3,722 per farm. The cash expenses equalled 48 per cent of cash receipts on Boissevain farms, 46 per cent on Reston farms, and 42 per cent on Melita farms.

Factors Influencing Labour Earnings.—As is shown in Table 3, the average labour earnings for all farms studied was \$1,109 per farm. This was in addition to an allowance of \$608 per farm to provide for interest on farm capital. There is sufficient variation from this average for the farms by districts to enable some analysis of the factors influencing farm returns. Thus, the farms for each district were studied as a group from the viewpoint of certain efficiency measures common to all. These included (1) size of business; (2) crop production efficiency; (3) livestock efficiency; (4) labour efficiency; and (5) capital use. These factors singly and in combination explain, in a large part, the reason for the differences in labour earnings among the three districts.

In Table 4, the respective measures are shown and ranked by districts. The differences in the values of the various measures for the three districts are not very large when considered singly but apparently a combination of all these factors influenced the farm returns as shown above. Thus, Melita which ranked first in seven of the ten factors listed, had the highest labour earnings. Reston which ranked highest in one and second highest in seven others, was second in labour earnings. Boissevain was lowest in labour earnings and ranked third in six of the ten measures.

Since the most significant difference in operator labour earnings was between farms at Boissevain and those in the other two districts, it was found desirable to determine some of the causes for this difference. This difference was more significant when it was noted that the average total capitalization was highest at Boissevain and that the average annual increase in net worth was also greatest for farms in this district. These two facts suggest that the long-time net farm productivity was largest at Boissevain and that the present difference in labour earnings may stem from the production pattern for the current year. An examination of the measures indicated in Table 4, as well as other data from the survey, seems to support this thesis.

The crop yield index at Boissevain was equal to the average for the entire group of farms being slightly lower than at Reston and somewhat higher than at Melita. But when the crop yield index is weighted by an index of high return crops the adjusted index becomes 86 for Boissevain and Melita, and 94 for Reston. This is due primarily to the lower total production of flax, a relatively high return crop, at Boissevain as compared with the other two districts. In addition, the relationship of the current crop yields to the long-time yields on these farms favoured Reston and Melita. For example, the 20-year average yield for wheat was 13.2 bushels per acre at Melita, 14.9 bushels at Reston, and 16.2 bushels at Boissevain. The current yield of wheat per acre was 16.0 bushels, 19.0 bushels and 16.7 bushels, respectively. Thus, Melita and Reston, geared to a lower long-term average production, gained a considerable advantage over Boissevain through the higher than average crop yields.

TABLE 3. FARM BUSINESS SUMMARY, 1945-46

	Reston	Melita	Boissevain	All farms
No. of Farms	71	73	72	216
	\$	\$	\$	\$
Total Farm Revenue.....	4,719	4,383	4,239	4,447
Expenses:				
Farm Expense.....	2,917	2,603	2,834	2,785
Unpaid Labour.....	436	342	407	395
Total Expense.....	3,353	2,945	3,241	3,180
Farm Income.....	1,366	1,438	998	1,267
Interest on Capital (a).....	553	572	700	608
Operator's Labour Income.....	813	866	298	659
Farm Perquisites.....	453	456	442	450
Operator's Labour Earnings.....	1,266	1,322	740	1,109

(a) Charged at 5½% which was the weighted average rate on existing debts.

Long-term records are not available for the farms concerned, to show the relative efficiency of livestock production. For the year concerned, however, the returns from productive livestock were \$41 per \$100 invested in livestock at Boissevain compared with \$42 at Reston and \$46 at Melita. Similarly, in numbers of productive livestock per 100 acres of cropland, Boissevain was lowest with 5.6 animal units. In the matter of labour efficiency, a trend similar to the above is observed. Boissevain farms averaged lower both in animal units per worker and in work units per worker, and were only one acre above the low in acres of cropland per worker.

TABLE 4. MEASURES OF EFFICIENCY IN PRODUCTION AND MANAGEMENT AND THE RANK FOR EACH DISTRICT, 1945-46

Factor	Reston		Melita		Boissevain	
	Group Average	Rank	Group Average	Rank	Group Average	Rank
Labour Earnings.....	\$1,266	2	\$1,322	1	\$740	3
Size of Business—						
Productive Man Work Units.....	331	2	393	1	378	3
Capital Invested.....	\$10,051	3	\$10,400	2	\$12,734	1
Crop Production Efficiency—						
Crop Yield Index.....	102	1	96	3	100	2
Productive Livestock Per 100 Acres Cropland.....	6.7	2	7.4	1	5.6	3
Livestock Efficiency—						
Returns from Productive Livestock per \$100 Invested in Livestock....	\$42	2	\$46	1	\$41	3
Labour Efficiency—						
Acres Cropland Per Worker.....	233	3	279	1	234	2
Total Animal Units Per Worker...	18.4	2	21.5	1	16.3	3
Work Units per Worker.....	242	2	277	1	238	3
Capital Use—						
Per cent Capital in Real Estate....	42.5	2	42.3	3	52.6	1
Acres Cropland Per \$100 Invested in Equipment.....	15	2	16	1	14	3

The impact of the production pattern on the Boissevain farms as compared with the other districts was as follows: (1) the total farm revenue was lower; (2) the ratio of total farm expenses to total farm revenue was higher; (3) the charge for interest on capital was higher. This resulted in a lower average operator's labour earnings. This analysis thus emphasizes some of the classical farm management concepts, that is, the need for a high output from crops and livestock as well as maximum efficiency in the use of labour. It also stresses the desirability of maintaining total farm production at or above the long-time level to which the farm business is geared.

WOOL: WARTIME PROGRAM

B. G. Good

Wool production during the war years increased by 22 per cent over the average of the pre-war years, 1935-39. This increase, although helpful in meeting expanded wartime demands, was inadequate because Canada's pre-war production amounted to approximately 25 per cent of total requirements. Wartime needs necessitated the development of a new program. Thus, to ensure the desired wartime allocation of supplies, new governmental administrative agencies, such as The Wool Administration, Melbourne Merchandising Limited and the Canadian Wool Board, Limited were established. Greater production was provided through higher prices and other financial inducements.

The Wool Administrator.—The first wartime governmental action in wool marketing was the appointment, on September 25, 1939, of a wool administrator.¹ The Administrator's duties and responsibilities became many and varied, but chiefly he was entrusted with the organization of any necessary arrangements for the procurement of supplies of wool, both domestic and foreign, required by Canadian manufacturers.

Melbourne Merchandising Limited.—To facilitate the continuous supply of military fabrics at all times, The Melbourne Merchandising Limited was organized in September, 1940, as a subsidiary to the Department of Munitions and Supply. The Company's only function was to supply wools for military requirements. The Government, through Melbourne Merchandising and the Department of Munitions and Supply, was virtually in the position of purchasing its own raw wool requirements, letting it out for processing, and repossessing wool in a finished military cloth. Melbourne Merchandising, holding large supplies of raw material, permitted the Department of Munitions and Supply to let contracts for small quantities of textile requirements, thus permitting valuable raw wool, suitable for non-military use, to be available should the need for military goods suddenly come to an end. Contracts awarded by the Department of Munitions and Supply contained a clause which specified that 75 per cent of the wool requirement of the contract had to be acquired through Melbourne Merchandising. While the overall wool control for Canadian requirements was entrusted to the Wool Administrator, military requirements of raw wool cared for by Melbourne Merchandising.

The Canadian Wool Board.—Another agency, the Canadian Wool Board, Limited, was deemed expedient in the national interest, not only to regulate the acquisition, conservation and distribution of domestic and foreign wool, but also to encourage further increased production of wool in Canada.² On the advice of the Wool Administrator, the Wool Board was established, under the Wartime Prices and Trade Board, to enhance further the Administrator's control of the marketing of raw wool in Canada. The Wool Board's decision to purchase the entire Canadian clip for the duration of the war and one year thereafter assured the sheep and wool producers a stable market at known prices for all their production.

¹ P.C. 2734, September 23, 1939. Order in Council appointing Wool Administrator.

² P.C. 1835, March 10, 1942. Order in Council authorizing the incorporation of the Canadian Wool Board, Limited.

The Wool Board, with the concurrence of the Wartime Prices and Trade Board, was given authority to set prices at which Canadian wools could be bought and sold.¹ The object was to establish prices which would assure the producer a reasonable return for his clip, commensurate with its quality. These prices were governed by the ceiling prices for similar grades and classifications which were in effect during the basic period, September 15 to October 11, 1941, when ceiling prices were established. The prices proved to be the same or slightly better than the full landed costs of similar types of wool imported into Canada.

Under the Wool Board, persons engaged in the collection of fleece wool operated under licence of the Board. All wool procured passed through registered warehouses, qualified to grade wools in accordance with the wool grading regulations. Settlement to the growers was made direct from the registered warehouses which graded the wools. These graded wools were taken over from the registered warehouses by the Wool Board at the prices paid to growers, plus a uniform commission rate which covered the cost of collecting, grading and handling the wool.

Pre-war Production 1930-1939.—The problem of expanding output was made more difficult because numbers of sheep on Canadian farms had declined during the nineteen thirties. The sheep and lamb population decreased from 3,693 thousand head in 1930 to 3,366 thousand in 1939. Likewise, shorn and pulled wool production declined from 16,654 thousand pounds, greasy basis, to 15,250 thousand pounds.

Production Encouragement.—By the spring of 1942 it had become apparent that more positive action would have to be taken to increase sheep numbers and expand wool output. At a Dominion-Provincial Conference, held in April of 1942, sheep and wool producers were asked to increase their production by 10 to 20 per cent over their 1941 production. To assist this increase, in addition to a widespread publicity campaign, the Dominion Government authorized immediate financial assistance towards the expansion of sheep raising in Canada.² This assistance to the extent of 130 thousand dollars, took the form of the Dominion Government payment of freight charges on the movement of female breeding stock, and in addition, the purchase and loan of rams to farmers who were willing to raise new flocks.

The Wool Bonus.—The wool bonus also provided a financial incentive for increased production and improved quality. Authority was granted under the War Measures Act, for the Agricultural Supplies Board to arrange for payment of a bonus on all individual clips which were carefully prepared for market at time of shearing.³ The quality and strength of the Canadian wool fibre were recognized as excellent and of particularly fine quality, but were often marred and degraded by too many fleeces containing excessive foreign matter. To overcome this difficulty and to compete successfully with foreign wools of similar grade, cleanly produced and properly prepared at the source, the Dominion and Provinces' four cent per pound bonus plan was agreed upon.

The payment of the bonus was to be on a fifty-fifty basis by Dominion and Provincial Governments and was applicable only when the Provincial Government concerned agreed to come in on the plan. The bonus applied to standard grades of Canadian unwashed fleece wool, with the exception of rejected or defective grades, and where the wool was prepared by the grower according to specific regulations. The regulations required that the wool be free of seeds, chaff, straw, burrs, manure tags and other foreign matter. Hairy, black and

¹ W.P.T.B. Order No. 117, March 23, 1942. Canadian War Orders and Regulations Respecting Wool.

² P.C. 4427, May 28, 1942. Order in Council authorizing financial assistance *re* immediate expansion of sheep raising in Canada.

³ P.C. 1/2519, March 29, 1943. Order in Council authorizing the payment of a bonus on the 1943 wool clip. Renewed to cover 1944, 1945 and 1946 wool clips.

grey leg and face clippings were to be kept separate and were not to be rolled with the fleece. Individual fleeces were required to be folded and tied separately with standard paper fleece twine.

The cost of the bonus plan to the Dominion Government from its inauguration on March 29, 1943, to March 31, 1947, amounted to 511 thousand dollars. With the participation of the provincial governments, a total of one million and twenty-two thousand dollars was expended.

Government Grading Regulations.—The administrative machinery for grading was already in existence under the provisions of the Live Stock and Live Stock Products Act, 1931. Under date of January 1, 1941, Government regulations respecting the Grading of Canadian Unwashed Fleece Wool were inaugurated. Established warehouses, located at convenient points, were authorized to handle and grade all farm and ranch clips. All warehouses were required to be registered with the Department of Agriculture and a wool grading certificate issued for each lot of the producer's wool. The identity of each clip was required to be retained, payment to the grower being based on the net received weight of the purchased grades. (These regulations applied to all wool marketed in Canada with the exception of wool utilized by the producer for his own domestic use.)

To comply with Canadian Wool Board purchase requirements, grading regulations throughout the war years have become a measure of prime importance to the producers. Between 1941 and 1946 inclusive, approximately 57.6 million pounds, an average of nine and one-half million pounds per year, have been graded under the supervision of Government Wool Inspectors (Tables 1 and 2).

TABLE 1. CANADIAN WOOL GRADED

—	1941	1942	1943	1944	1945	1946
No. of Registered Warehouses.....	26	38	34	31	31	29
Weight of Wool Graded ('000 lbs.).....	8,236	10,207	10,385	10,523	9,853	8,318

Source: Department of Agriculture, Marketing Service.

TABLE 2. TYPE OF CANADIAN WOOL GRADED

—	1941	1942	1943	1944	1945	1946
	('000 lbs.)					
Western Range.....	—	3,868	3,836	4,176	3,865	3,343
Western Domestic.....	—	2,609	2,823	2,736	2,708	2,075
Eastern Domestic.....	—	3,730	3,726	3,611	3,280	2,900
Total.....	8,236	10,207	10,385	10,523	9,853	8,318

Source: Department of Agriculture, Marketing Service.

An analysis of the graded volume of wool for the period 1942 to 1946 shows that fine wools (56's to 70's) were on the increase, while crossbred wools (40's to 50's) have declined. Western Range Wool, originating mainly in Southern Saskatchewan, Southern Alberta, and the interior of British Columbia, furnishes the bulk of the fine wool. The quality of Western Domestic, or farm

wool, is rather evenly divided between 56's and 48's to 50's. The 56 grade results from fine woolled ewe breeding stock being crossed with Down rams in farm flocks. In Ontario, Quebec and the Maritime Provinces the wool clip, known as Eastern Domestic, is produced from flocks of crossbred Oxford, Shropshire, Hampshire, Suffolk and Leicester sheep. This Eastern Domestic Wool, bulking predominantly in quality from 40's to 50's is in good demand and most useful in the manufacture of yarns, blankets and paper felts.

Sheep and Lamb Population.—Partly in response to an educational campaign and partly in response to financial assistance and incentives, sheep and lamb numbers and wool output increased. Numbers of sheep and lambs since 1939 increased in Eastern Canada, but the increase was decidedly marked on Western farms. A comparison of sheep and lamb numbers on Canadian farms during the period 1940 to 1946 with the 1935 to 1939 average of 3,082 thousand head showed a gradual decrease through 1940 to a wartime low of 2,840 thousand head in 1941. The trend in numbers improved throughout the following three years, 1944 showing a peak of 3,725 thousand head. In 1945 and 1946 numbers again decreased to 3,622 thousand head and 3,378 thousand head respectively.

Wool Production 1940-1946.—The number of sheep and lambs shorn on the 1935-39 average for all Canada amounted to 1,704 thousand head. During the war this number gradually increased until 1944 when 2,007 thousand head were shorn. Throughout 1945 and 1946 the shorn number declined to 1,793 thousand head, 10 per cent below the 1944 total and only 5 per cent above the pre-war average.

In spite of continued labour shortages, Canada's annual shorn and pulled wool crop increased until it was almost four and one-half million pounds greater in 1944 than it was in 1940. The trend of shorn wool production showed a gradual increase from the 1935-39 average of 12,243 thousand pounds to the 1944 peak year production of 15,128 thousand pounds. Pulled wool, with the exception of a slight decline in 1940, showed a steady increase to 5,290 thousand pounds produced in 1946 (Table 3).

Imports.—Canadian production of raw wool falls short of domestic requirements. Imports of foreign wools are necessary. Imports of unfinished wool into Canada consist of wool in the grease, wool washed or scoured, wool pulled or slipped, noils, worsted tops and garnetted wool waste in the white. During the war years, with the greatly increased demands for textiles of all kinds, particularly military fabrics, in spite of the necessity of accepting international allocations, and in spite of shipping difficulties and the dangers of wartime ocean transportation, imports of raw and unfinished wool increased from a 1935-39 annual average of 52,821 thousand pounds, in the grease, to a 1940-46 annual average of 87,181 thousand pounds. Compared with the pre-war average, a very considerable increase in the importation of foreign wool was particularly noted in 1942 by the importation of 114,428 thousand pounds and 100,042 thousand pounds in 1946.

Analysis over the seven-year period, 1940-46, showed wool in the grease to represent 33 per cent of the total unfinished wool imported, while wool washed or scoured amounted to 32 per cent. Wool pulled or slipped totalled 8 per cent, and garnetted wool waste in the white 1 per cent. Canadian imports of wool are mainly received from New Zealand, Australia, British South Africa and the United Kingdom.

Exports.—Canadian exports of unfinished wool consist mainly of wool in the grease, wool pulled or slipped and wool washed or scoured. Exports of wool are shipped almost entirely to the United States, less than 1 per cent being

exported to Newfoundland and the United Kingdom. Since 1940 and to the end of 1946, 42 million pounds, an average of 7 million pounds per year, were exported. This volume of exports consisted of wool in the grease 57 per cent, pulled or slipped 26 per cent, washed or scoured 13 per cent and noils 4 per cent. The 1935-39 average exports amounted to approximately 6,580 thousand pounds per year as against 15,520 thousand pounds exported in 1944 and 6,409 thousand pounds in 1946.

Domestic Disappearance.—The domestic disappearance of wool in Canada during the war and post-war period to the end of 1946 greatly increased over the 1935-39 average of 60,243 thousand pounds per year. During 1942, 130,521 thousand pounds of wool disappeared into domestic consumption, and in 1946, 112,634 thousand pounds was consumed. The heavy demands for fabrics of all kinds did not ease during 1946, though military demands decreased, civilian demands, coupled with re-establishment and relief programs, continued to increase.

Prices.—Wool prices during the war period increased considerably. During the pre-war period of 1935-39 the average price of Canadian raw wool, at the farm, amounted to 13·5 cents per pound. At the end of the 1941 season the price had increased to 22·1 cents. After advances to 22·5 cents in 1942, the price during the following four years to the end of 1946 remained stabilized at approximately 27 cents per pound.

The average wholesale price at Toronto during the period 1935-39, showed Eastern Domestic Wool, low medium or 1/4 blood staple priced at 20·2 cents per pound. Western Domestic Wool, semi-bright, medium or 3/8 blood staple was priced at 19·3 cents, while Western Range Wool, semi-bright, fine medium, 1/2 blood staple sold at 19·4 cents per pound. The average wholesale price for all grades, from all parts of Canada during this 1935-39 period at Toronto showed an average of 18·8 cents per pound in the grease. In 1942 the wholesale price of wool in the grease on the average for all grades and classifications became stabilized at approximately 28·3 cents, with Eastern Domestic, 1/4 blood staple priced at 31 cents, Western Domestic 3/8 blood staple 28 cents and Western Range 1/2 blood staple 26 cents.

Summary.—Wool production in Canada during the Second Great War increased from 16 million pounds to better than 19 million pounds. The quality improved, the price increased and the procurement policy of the Wool Board provided an assured outlet for total wool production in Canada during the year 1942 to the end of 1946.

TABLE 3. CANADIAN WOOL PRODUCTION
(Greasy basis)

	Average 1935-39	1940	1941	1942	1943	1944	1945	1946
	('000 lbs.)							
Shorn.....	12,243	11,549	11,630	12,867	13,929	15,123	14,513	13,711
Pulled.....	3,778	3,346	3,624	3,610	3,889	4,151	5,113	5,290
Total Production.....	16,021	14,895	15,254	16,477	17,818	19,279	19,626	19,001

MILK CONTROL LEGISLATION IN CANADA¹

B. A. Campbell

Fluid milk control agencies have been set up in all provinces of Canada and while the type of control differs in the various provinces, the method of operation and the powers of the agencies are very similar. A summary of milk control legislation in Canada, as in effect in July, 1947, is tabulated in Table 1, with the powers and regulations outlined in Table 2.

Type of Control Board.—The first government appointed agency in Canada with power to maintain price structures for fluid milk was set up in Manitoba in the early 1930's. By 1939, similar legislation was effective in seven of the nine provinces and by 1946 all provinces had adopted milk control measures. Most of the initial acts setting up legislation have been amended and strengthened since they were first passed. In Nova Scotia and Alberta the control agencies now operate under the authority of the Public Utility Commissions while in British Columbia a separate board has been formed by amending the Public Utility Act. In the other provinces the boards are designed to operate as independent bodies. The number of members on the boards varies from one in Saskatchewan and British Columbia to four in Quebec. In Ontario the Milk Control Board is divided into two sections, the Fluid Milk Board with three members and the Concentrated Milk Board with five members. However, for the purposes of this analysis only the fluid milk board has been considered.

Method of Financing.—Three provinces finance the operations of the boards completely from the consolidated revenue funds of the province. Four provincial boards are authorized by the government to collect revenue for their operations from licence fees and assessments of those engaged in the fluid milk industry, while in the remaining two provinces the necessary funds are obtained partly from the province and partly from assessments on the industry.

Powers and Regulations of the Milk Control Agency

All provincial agencies have the power, under their control legislation, to inquire into all matters pertaining to the fluid milk industry. Milk control operates in those areas defined by the provincial boards, and while all boards have the authority to bring any area in a province under control, in most provinces the controlled areas are confined to the larger centres in the provinces.

Licensing Controls.—One of the main functions of the milk boards is the licensing of those engaged in the fluid milk business. All boards require that distributors be licensed by them and these licences can be revoked if the regulations of the board are not followed. In four of the provinces licensing of milk transportation is carried out under the milk control agencies, while in Manitoba, Saskatchewan and British Columbia, the licensing of milk truckers comes under the jurisdiction of other government agencies. All provinces, except Ontario, Quebec, and Saskatchewan, require that producers also obtain licences before shipping milk for fluid milk consumption.

Minimum Price Regulations.—In milk control areas, prices for milk are established at both the consumer and producer levels. In two provinces, Alberta and Quebec,² only minimum prices are established and while these prices do actually in practice become the legal prices, there is nothing to prevent distributors from increasing either the buying or selling prices at any time. In Nova Scotia consumer prices are fixed while producer prices must be

¹ This is part of an unpublished report on *Fluid Milk Distribution in Canada During War Years* by the same author.

Acknowledgments: The author wishes to acknowledge the assistance of officials of Provincial Milk Control Agencies in obtaining information outlined in the tables.

² This regulation will likely be clarified for Ontario when the Ontario Royal Commission investigating the milk industry makes its report. Prior to establishing the commissions, when the Milk Board arbitrated prices, the producer price was a minimum price and the consumer price, a fixed price. When the Board approved agreements, a definite producer and consumer price was outlined.

TABLE 1—MILK CONTROL LEGISLATION IN CANADA 1947

Province	Name of Control Agency	Year Present Act Enacted	Number of Members	Appointed by	Representing	Financed by
PRINCE EDWARD ISLAND...	Prince Edward Island Milk Control Board (formerly Prince Edward Island Milk, Cream, Producers, Distributors and Consumers Protective Board).	1941	3	Provincial Government...	{1. Dairy superintendent. 2. Consumers..... 3. Producers, distributors.	License fees from producers and distributors.
NOVA SCOTIA.....	Public Utility Commission of Nova Scotia.	1944 (Amendment to Agriculture Marketing Act).	3 and secretary	Provincial government...	Not specified.....	License fees and provincial legislature.
NEW BRUNSWICK.....	New Brunswick Dairy Products Commission.	1935 (Dairy Products Act)	3 and secretary	Provincial government...	{1. One producer supplier 2. Two other members.	Provincial legislature.
QUEBEC.....	Dairy Industry Commission of Quebec.	1941 (Dairy Products Act)	4 and secretary	Provincial government...	{1. Producers..... 2. Distributors..... 3. Government.....	Provincial Legislature.
ONTARIO.....	The Milk Control Board of Ontario.	1937 (The Milk Control Act).	3 and secretary (Fluid Milk Board only).	Provincial Government...	{1. One civil servant—chairman..... 2. One producer..... 3. One distributor.....	Provincial Legislature.
MANTOBA.....	The Milk Control Board of Manitoba.	1937 (The Milk Control Act).	3 and secretary	Provincial Government...	Not specified.....	Assessment of producers and distributors.
SASKATCHEWAN.....	The Milk Control Board of Saskatchewan.	1940 (The Milk Control Act).	1	Provincial Government...	Not specified.....	Assessment of all engaged in dairy industry.
ALBERTA.....	The Board of Public Utility Commissioners of Alberta.	1934 (Amendment to Public Utility Act).	2 and Administrator of Milk Control.	Provincial Government...	Not specified.....	Provincial Legislature. 25 per cent; assessment of fluid distributors and producers 75 per cent.
BRITISH COLUMBIA.....	Milk Board of British Columbia.	1946 (Amendment to Public Utility Act).	1	Provincial Government...	Not specified.....	Licensing fees from producers and distributors.

TABLE 2—POWERS AND REGULATIONS OF MILK CONTROL AGENCIES IN CANADA IN 1947

POWER TO—	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
Inquire into all matters pertaining to fluid industry.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Define market area.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Issue and revoke licenses of—									
Producers.....	Yes	Yes	Yes	No	No	Yes	No ⁷	Yes	Yes
Milk transporters.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No ²	Yes
Distributors.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Establish price for milk—									
Consumers.....	Yes	Yes	Yes	Minimum only	⁸	Yes	Yes	Minimum only	Yes
Producers.....	Yes	Minimum only	Yes	Minimum only	⁸	Yes	Yes	Minimum only	Yes
(Differential in price from Standard Test if any—cents per 100 pounds for each 1/10 change in variation in test).....	Paid on fat basis	3 cents	3 cents	3 cents ¹	3½ cents	3 cents	5 cents	3c. Standard only 5 c. Jersey	5 cents
Arbitrate in disputes.....	Yes	Yes	Yes	Not specified	Yes	Yes	Yes	No	Not specified
Examine book and records.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
REGULATIONS REQUIRE—									
Bond from distributors.....	No	Yes	Yes	Yes	Yes	Yes	No ⁶	No	Yes
Periodic report from distributors.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Payment to producers by certain date each month.....	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Distributors to give statement to suppliers.....	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No
Distributors give notice before stopping to accept milk from producer.....	No	15 days	30 days	30 days	if just cause	Yes with Board approval	⁴	Yes, at Board's discretion	No ⁶
Producers give notice before stopping to ship milk to distributors.....	No	15 days	Yes 30 days	Yes 30 days	No	Yes with Board approval	⁴	Yes, at Board's discretion	No ⁶
Prohibits distributors from requiring investment of capital from producers.....	No	Yes	No	No	Yes	Yes	No	No	No

¹ 3 cents in all centres except Hull where there is a 4 cent differential.² Power not involved—truck licensing carried on by Public Utility Board.³ No deduction for investment except on receipt of producer's requisition.⁴ Regulations under consideration—August 1, 1947.⁵ Administered by other boards or departments.⁶ No specific notice required but producer must obtain approval from board before changing his shipments from one milk dealer to another.⁷ Not required under board order but usually carried out by city market authority.⁸ See footnote 2, page 91.

"not less than" those established by the Board of Commissioners of Public Utilities. In provinces where both consumer and producer prices are fixed, distributors have a fixed margin on which to operate and any increase in efficiency in operation is reflected in increased returns to distributors.

Margins Allowed.—When fixing the prices for milk, the spread or margin between producer and consumer is always subject to close examination by the milk control boards. As boards have the power at all times of examining the books and records of distributors, they are in a position to determine a reasonable price spread for distribution. Distributors' margins vary within controlled areas in a province as well as between provinces, and are dependent on local conditions. The size of the controlled area has a direct effect on distribution costs, while wage rates and even climatic conditions will affect costs of operation.

Price Differentials.—In most provinces, producer prices are quoted on the basis of a standard butterfat test with a price differential paid for each 1/10 per cent variation from this standard test. In 6 of the 8 provinces in which this system prevails, 3 cents or 3½ cents per 100 pounds is fixed as the differential for standard milk. In Saskatchewan and British Columbia, the differential is 5 cents per 100 pounds for each 1/10 of a per cent change in the butterfat price and is more in line with present day butterfat prices. In Prince Edward Island and in certain centres in Saskatchewan where milk is purchased on a butterfat basis, this discrepancy does not occur.

Arbitration.—While only six of the nine provinces have the power to arbitrate in disputes within the fluid industry, nevertheless, the price fixing and licensing power of all boards, in effect, enables each of them to act as a judicial body.

Bonding Operations.—Most provinces (Alberta and Prince Edward Island excepted) require fluid milk distributors to deposit bonds with the milk control board. These bonds have a stabilizing effect on the industry and insure that distributors do not default payment to producers. The amount of the bond is determined by the milk control agency and may be adjusted as the need arises.

Reports from Distributors.—All provincial boards require a periodic report (usually monthly) from each distributor. The type and amount of information varies from province to province but is used by the various boards as the basis for a monthly report on purchases and sales of milk and cream.

Time of Payment.—Most boards stipulate in their regulations that producers must be paid by a certain date of each month. Most distributors make a practice of giving a statement to their suppliers when payment is made for milk although the regulations of the British Columbia Milk Board do not require that this be done.

Notice of Termination.—The question of distributors or producers giving notice before terminating shipments is one that is treated in various ways by the provincial boards. In two provinces, Prince Edward Island and Manitoba, no notice need be given by the distributors to the producers, although in the case of Manitoba, the Milk Board must give its approval. In Ontario the distributor can terminate shipments by producers immediately if there is just cause. In British Columbia no notice is required to cut off a shipper but a producer must obtain permission from the Milk Control Board before changing from one distributor to another. In 4 other provinces, the distributor must give shippers notice if he intends to stop accepting milk.

Two boards, namely Nova Scotia and Ontario, have regulations which prohibit distributors from requiring producers to invest capital in the company.

Provincial fluid milk legislation has developed within the last 15 years and is now accepted in all parts of Canada as a necessary feature of fluid milk marketing. It was in the interest of producers, distributors and consumers that these milk control agencies were first set up and there is much evidence that they are serving this purpose.

REVIEW OF LITERATURE

WILCOX, Walter W. *The Farmer in the Second World War*. Ames, Iowa, The Iowa State College Press. 1947. pp. xii + 410.

This book records the more significant information relating to United States farmers and agriculture during the second World War. Canadians will be interested in this historical study as both the United States and Canadian farmers had to face and solve similar problems; although, in terms of population and output, a smaller country, Canada did not face the same complex, administrative problems that her American neighbour did.

Professor Wilcox, agricultural economist, professor, practical farmer, and one-time civil servant, was in a good position to write a critical history of United States agricultural policy in the war years, 1939 to 1945. He delved into both the political and economic factors leading to specific action. However, although the title implies that the book is about the farmer, only two chapters deal directly with the farmer. The remaining 21 chapters are concerned with the broader aspects of policy on a national level. The author discusses price and production policies, specific commodities, and the administrative agency, the United States Department of Agriculture. He describes the changes that have occurred in structure of the agricultural industry. He concludes that, "though substantial progress has been recorded in farm families' standard of living and in the legislation designed to improve and stabilize incomes, the basic problems remained unsolved".

Professor Wilcox has written a good book which not only provides an historical account of wartime experiences but some guidance to those who find themselves in the post-war period immersed in policy formulation and administration.

BLACK, J. D., and CLAWSON, SAYRE and WILCOX. *Farm Management*. New York, The MacMillan Company. 1947.

This textbook, having over 1,000 pages, divided into five parts, with 48 chapters, is, in the words of the four authors, "intended primarily for use in the junior and senior years in agricultural colleges . . . It also assumes that the student will have had an elementary course in the Principles of Economics" . . . As pointed out in the Authors' Preface, an effort was made to provide a textbook which is suited to the teaching of Farm Management in all parts of the United States. For Canadian students, this, in no way, detracts from the value of the textbook. The principles and methods of analysis are applicable to Canadian conditions.

The authors, in their preface, claim that, "The outstanding characteristic of the treatment of Farm Management in this textbook is that the analysis is in terms of the *farm as a whole*. The economics presented is the *economics of the farm as a firm* . . .".

Farm marketing and purchasing co-operatives in the United States have over five million members. This membership, however, does not represent that number of individual farmers because many of them belong to more than one co-operative. Volume of business, a better measure of size, during the 1945-46 marketing season, reached a new peak of six billion dollars. Marketing of farm products constituted nearly 80 per cent of the total dollar volume of business.

NOTES

An all-time high in trade union membership in this country was established in 1946. Trade union membership in Canada was almost 15 per cent higher than the previous record figure established in 1944, and more than 120 per cent above the 1938 total.

In the years from 1939 to 1944, trade union membership increased from 358,967 to 724,188. The year 1945 showed a reduction of about 13,000 union members, but 1946 recorded the greatest increase of all with total membership jumping from 711,117 to 831,697. Of an estimated 3,153,000 non-agricultural wage and salary workers, 14 years of age or more, 26·4 per cent were members of trade unions at the end of 1946.

The largest percentage increase for 1946 occurred in the wood and wood products group where union membership rose from 49,259 to 76,959 for a gain of 56·2 per cent. Membership in the foods group increased 46·7 per cent from 28,464 to 41,749, while the textile group showed an increase of 18·2 per cent from 28,248 to 33,382.

The United Kingdom contract price for bacon was increased on September 1, 1947 to \$29.00 per hundredweight for Grade A Wiltshires. Domestic price ceilings were adjusted accordingly. Part of the increase will likely be absorbed by packers because of increased costs.

The Canadian Wheat Board has announced the maximum prices of flaxseed, sunflower seed and rape seed for the crop year 1947-1948. The maximum price of any grade of No. 1 Canada Western flaxseed is \$5.00 per bushel, basis in store Fort William/Port Arthur or Vancouver. The maximum price of any grade of No. 1 Canada Western Sunrise Sunflower seed is six cents per pound, f.o.b. buyers' receiving point, and for rape seed, it is six cents per pound delivered to the buyers' receiving point.

The Dominion Government has also announced that the price of wheat under the United Kingdom contract for the 1948-49 crop year will be \$2.00 per bushel, No. 1 Northern, basis Fort William/Port Arthur.

The price of apples (out of the 1947 crop) is to be supported by the Agricultural Prices Support Board. The reason for this action is due to the fact that Great Britain is not in a position this year to buy Canadian apples in the usual way. The loss of this export market is especially serious to Nova Scotia apple growers. The Prices Support Board has guaranteed a minimum average return of \$2.25 per barrel to the grower before packing cost for all varieties and grades handled by the Nova Scotia Apple Marketing Board.

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T H E
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Minister of Agriculture

February, 1948

THE ECONOMIC SITUATION

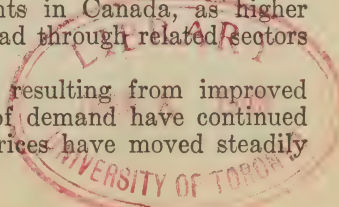
In the year 1947, there was the continuation of the productive activity that characterized the previous six years. Canada's population continued to gain in numbers through natural increase and immigration. Total output was greater, although unfavourable weather reduced agricultural production. Net national income was higher. Exports and imports expanded markedly. During most of the year, there were more jobs than applicants, and wage rates and earnings per capita rose. Prices received by farmers increased considerably. Retail sales expanded. On the other hand, the cost of living for city and farm people rose considerably. The most substantial increases, in the period between January and December, 1947, were in foods, clothing and home furnishings. This increase in the cost of living generally absorbed the gains in income.

National income.—Net national income for 1947, at \$10.7 billion exceeded that of the preceding year. While most of this increase is due to a higher price level, physical output has also increased. The higher level of national production has been accompanied by a record volume of civilian employment. At the same time, average unemployment for the year has fallen to the exceedingly low figure of two per cent of the labour force.

On the basis of the ninth labour force survey (of the Dominion Bureau of Statistics) which covered the week ending November 8, 1947, it is estimated that employment was 4,847,000, and unemployment 87,000. Total employment in mid-August was up to 5,008,000. Total wages, salaries, and supplementary income for the period January to September, 1947, are estimated at \$4.4 billion, an increase of 18 per cent over the same nine-month period of 1946. Furthermore, employment and output have been well sustained throughout the full course of the year with no indication of any falling off as the year drew to a close. The index of industrial production in October, 1947, was nearly 180 (1935-39=100), the highest for the year and well above the index of 157.6 in October, 1946.

Prices.—During the past two years, but most markedly in 1947, along with decontrol, a readjustment of the price structure to the realities of the post-war situation has been taking place. The majority of subsidies have been eliminated, while others have been greatly reduced, and practically all price ceilings have been removed. Of those remaining, most have been raised to reduce the wide differential between domestic prices and those obtainable in foreign markets. The continued inflationary pressures in the United States also exert a significant influence on price movements in Canada, as higher prices for such basic materials as coal and steel, spread through related sectors of the Canadian economy.

Thus, in spite of a larger volume of supplies, resulting from improved domestic production and higher imports, the forces of demand have continued dominant throughout the year. As a consequence, prices have moved steadily



ANNUAL AND MONTHLY INDEX NUMBERS
WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES (a)

Year	Wholesale Prices 1935-39=100			Farm Prices of Agricultural Products 1935-39=100	Commodities and Services used by Farmers 1935-39=100		Cost of Living 1935-39=100	
	Farm Products (b)	Field Products (c)	Animal Products (d)		Eight Factors (f)	Eleven Factors (g)	Farm Living Costs (h)	Urban Living Costs (i)
1913.....							79.6	79.1
1914.....							82.0	79.7
1915.....							86.3	80.7
1916.....							93.6	87.0
1917.....							111.6	102.4
1918.....							131.4	115.6
1919.....							143.0	126.5
1920.....							170.7	145.4
1921.....							139.5	129.9
1922.....					126.9	133.2	127.5	120.4
1923.....					118.7	128.7	127.9	120.7
1924.....					122.5	132.6	125.1	118.8
1925.....					124.3	131.8	123.6	119.8
1926.....	144.4	158.5	130.2		120.6	129.3	120.9	121.8
1927.....	138.6	149.4	127.8		120.9	130.1	119.5	119.9
1928.....	136.3	134.3	138.2		119.4	128.2	118.3	120.5
1929.....	140.8	137.2	144.4		118.4	127.5	117.4	121.7
1930.....	119.5	105.8	133.3		105.7	116.3	113.7	120.8
1931.....	78.9	65.0	92.7		91.8	100.8	103.7	109.1
1932.....	65.5	60.4	70.5		88.7	93.4	97.7	99.0
1933.....	69.3	69.3	69.2		88.4	90.0	95.7	94.4
1934.....	83.5	80.5	86.5		96.8	96.0	97.8	95.6
1935.....	89.2	84.4	94.1	88.0	95.6	96.0	97.9	96.2
1936.....	97.9	102.2	93.7	96.9	98.4	98.0	98.3	98.1
1937.....	117.4	128.9	106.0	119.7	108.5	105.4	102.9	101.2
1938.....	102.9	100.9	104.8	105.0	101.1	101.5	102.0	102.2
1939.....	92.6	83.7	101.5	91.8	96.1	99.1	99.5	101.5
1940.....	96.1	85.4	106.7	96.8	102.3	105.8	108.6	105.6
1941.....	106.6	88.9	124.4	110.2	108.2	114.2	114.2	111.7
1942.....	127.1	109.7	144.6	133.1	119.7	128.1	119.2	117.0
1943.....	145.4	129.0	161.8	157.8	122.4	136.0	121.7	118.4
1944.....	155.3	144.5	166.1	172.3	125.7	139.9	122.8	118.9
1945.....	160.3	150.4	170.2	177.3	125.5	142.6	123.2	119.5
1946.....	165.0	148.8	181.2	184.1	127.7	145.4	127.1	123.6
Sept.....	164.5	145.8	183.1	184.4				125.5
Oct.....	164.2	144.3	184.2	183.9				126.8
Nov.....	164.5	143.7	185.3	184.8				127.1
Dec.....	165.6	143.6	187.7	185.5				127.1
1947								
Jan.....	168.0	143.7	192.3	186.6	130.4	146.7	132.2	127.0
Feb.....	169.0	144.3	193.8	187.0				127.8
Mar.....	170.0	145.2	194.8	189.3				128.9
Apr.....	171.3	145.4	197.2	190.4	138.5	156.8	136.1	130.6
May.....	174.0	150.2	197.8	192.1				133.1
June.....	175.7	151.6	199.8	194.9				134.9
July.....	177.8	158.1	197.5	195.1				135.9
Aug.....	178.8	157.8	199.8	196.6	145.8	164.2	146.5	136.6
Sept.....	181.9	158.0	205.9	200.2				139.4
Oct.....	181.3	159.8	202.9	200.4				142.2
Nov.....	186.6	168.9	204.4	203.9				143.6
Dec.....	193.9	171.1	216.1	208.3				146.0

(a) All index data computed by Dominion Bureau of Statistics.

(b) Canada. Dominion Bureau of Statistics, Prices Branch. *Wholesale Price Index Numbers of Canadian Farm Products*. (Mimeo). Ottawa. Nov. 1947, and *Prices and Price Indexes*. Nov., 1947. Wholesale prices of products of Canadian farms.

(c) Ibid (b). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid (b). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agricultural Division. *Index Numbers of Farm Prices of Agricultural Products*. (Mimeo). Ottawa. Monthly.

(f) Canada. Dominion Bureau of Statistics, Prices Branch. *Price Index Numbers of Commodities and Services Used by Farmers*. (Mimeo). Ottawa. Jan., Apr. and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) Ibid (f).

(i) Canada. Dominion Bureau of Statistics, Prices Branch. *Prices and Price Indexes, 1913-43*. Ottawa. 1945, and (Mimeo) Nov., 1947.

upward with the general wholesale price index and the cost-of-living index showing increases of 22 and 15 per cent, respectively, between January and December 1947. These buoyant market forces have been the result of both the enhanced demands of a full employment economy and of the accumulated needs that have been left unsatisfied during the six years of war.

The urban cost-of-living index (1935-39=100) rose to 146.0 by December 1, 1947. The rise in the index since December 1, 1946, was 18.9 points and since April, 1947, 15.4 points. The percentage increase since September 1, 1945, was 21.8. It is anticipated that cost of living will show an increase in January, an increase reflecting the new prices for bacon, beef, cheese and eggs.

Major policy developments during the year 1947 include the continuation of decontrols, the Geneva tariff agreements, and the establishment of regulations for restricting imports, designed to improve Canada's United States dollar balance.

External Trade.—In November, 1947, a long-range and a short-range policy of international trade were announced. The long-range policy is embodied in a multilateral agreement providing for reciprocal tariff reductions and greater opportunities for Canadian trade. Concessions secured by, and concessions granted by Canada, alike, cover wide fields in agriculture, other primary industries, and manufacturing.

On January 1, 1948, the tariff concessions granted by Canada in the General Agreements in Tariffs and Trade became effective. These tariff concessions will be accorded to each of the 44 foreign countries to which Canada at present grants most-favoured-nation tariff treatment and to all parts of the British Commonwealth of Nations.

The Canadian concessions are set forth in Schedule V of the Agreement and consist of some 1,050 items, of which 590 provide for reductions in the most-favoured-nation tariff below existing rates, and about 460 for the binding or consolidation of the present most-favoured-nation rates. The concessions include about 100 items in the British Preferential Tariff in regard to which reductions are made in favour of British Commonwealth countries.

A small number of items in the Canadian schedule (respecting which reductions were negotiated with countries that have not undertaken to bring their concessions into effect on January 1, 1948) are being withheld until such time as those countries are in the position to make their concessions available to Canada.

The short-term policy—an emergency and temporary one—is designed to meet Canada's shortage of United States dollars. It provides for prohibition of certain imports, and for quota restrictions in others. It curbs pleasure travel in the United States. A bonus is provided for additional gold production. An excise tax was imposed on a wide range of durable consumer goods containing a high percentage of parts or materials which are imported from the United States. This policy will result in higher costs for many consumer items. On the other side are tax reductions intended to lower prices of some essential goods. The effect of the import restrictions will be to reduce considerably the level of imports, particularly from United States.

The prohibited list covers a wide variety of consumer goods and certain other articles which the government has decided can no longer be permitted to draw on Canada's reserves of foreign exchange. The list includes a number of items of a luxury or non-essential character. It also includes a good many things which are important in themselves but which are produced in Canada in substantial quantities and which are frequently of such a nature that their purchase may be postponed.

The value of commodities exported during the first eleven months of 1947, ended November, was \$2.5 billion, an advance of more than 19 per cent over the value for the same period in 1946. Imports during the same eleven months in 1947 amounted to nearly \$2.4 billion, an increase of over 36 per cent over the same eleven month total in 1946.

Canada, for the period of discussion, had an overall favourable balance of trade with all countries of \$161 million, compared with over \$379 million in the eleven months of 1946. Aggregate deficit with the United States was \$884 million, compared with \$436.6 million a year earlier, and the credit balance with the United Kingdom, \$511.8 million compared with \$349.6 million.

To meet some of the shortage in United States dollars, an agreement covering a line of credit of \$300 million to Canada was signed on January 8, 1948, between Canada and the United States. This loan is for the purpose of assisting Canada to continue importing essential machinery and equipment and industrial raw materials from the United States.

Decontrol.—Although the policy of gradual removal of wartime restrictions was inaugurated about two years ago, the majority of controls was kept in operation until the end of 1946. In the past year, however, the transition from wartime controls to a free market was accelerated. Developments in late December, 1947, and January, 1948, have led to the reimposition of some price controls. The Minister of Finance, on January 15, 1948, announced that

1. Price ceilings are being reimposed on meat and on butter.

2. The prices of certain types of fertilizers which have advanced sharply in Eastern Canada will be reduced by the application of mark-up controls and by the roll-back of certain basic chemical ingredients.

3. Mark-up controls will be applied where necessary to imported fruits and vegetables.

4. The Government will invite Parliament to extend its authority to control prices and rents for a further period of one year, *i.e.*, to March 31, 1949.

5. Price ceilings on sugar and molasses, oils and fats, certain canned fruits and vegetables, primary iron and steel, tin, and residential rents will be continued in effect until circumstances justify their removal.

6. The Wartime Prices and Trade Board is giving consideration to instituting prosecutions of persons who appear to have been selling at prices that are higher than is "reasonable and just".

The Minister, however, stated that:

The government does not propose to return to any general system of overall price ceilings, but it is particularly concerned with recent increases in Canadian food and related costs. Many of the recent price increases have been no more than a necessary adjustment to higher world prices and cost factors. But in some instances prices at the processing and distribution levels have advanced more rapidly than circumstances justify, and there appears to be prospects of still further increases of this kind.

For these reasons the government will be asking Parliament for an extension of its general price-controlling powers, and is taking immediate steps to reimpose certain specific price ceilings and mark-up controls.

Meat price ceilings are being re-established at levels which are in line with the new United Kingdom contract prices, which, in turn, have recognized the recent advances in farmers' feed and other costs. Beef, lamb and veal prices are being fixed at levels moderately above the former ceilings.

The price of butter is being fixed on the basis of 67 cents per pound for wholesale solids at Montreal, and regional differentials and wholesale and retail mark-ups will be the same as provided for in the former Order relating to maximum butter prices. The last ceiling prices in June, 1947, were based on a 50 cents a pound price.

CHANGES IN PRAIRIE AGRICULTURE, 1941-1946¹

FRANK SHEFRIN

Fewer people were on prairie farms in 1946 than in 1941. There were fewer but bigger farms; the value of farm capital increased, but farm indebtedness was reduced; ownership increased; and fewer farmers were producing more and were using more equipment. These are some of the facts indicated by the 1946 census of the Prairie Provinces.

These changes occurred under wartime conditions. Canadian (and prairie) agriculture in this five-year period had to adapt itself, first, to a world at war, and second, to a world in transition from war to peace needs. These changes occurred in a period when agriculture, as well as other phases of Canadian activity, was subjected to increased governmental administration (up to the end of the war in 1945), and then to an accelerated program of decontrol. These changes occurred in a period when the anticipated wartime demand for farm products was slow to materialize, then expanded very rapidly, and in the transition period this demand did not decline as expected, but was maintained at a high level because recovery in world agriculture was retarded.

It was during this period that prairie and other Canadian farmers were guided in their production programs by objectives based on war needs and formulated at annual Dominion-Provincial agricultural conferences. Encouragement by educational campaigns, plus price increases and subsidy payments rather than direct regulations, were relied upon.

As a result of wartime needs and influences during this five-year period total output expanded and there were changes in the pattern of production. In Manitoba, Saskatchewan and Alberta, there was rapid expansion in the livestock population. There was a shift from the growing of wheat to the growing of coarse grains. A greater acreage was planted in oil-bearing crops. After 1943, there was a movement back into wheat production.

Adjustments in agricultural output occurred with a reduced manpower on the Prairies and elsewhere. At first, only *surplus* manpower left the farms, but later, essential farm labour left. The farms in Manitoba, Saskatchewan and Alberta were among the heaviest losers. There are, however, still more rural than urban people on the Prairies, although the number living on farms and in rural areas declined considerably between 1941 and 1946. Of the 2.4 million living on the Prairies, slightly over a million were on farms and another million in urban areas. The remainder lived in unincorporated villages and hamlets scattered through the open plains. On the whole, there were 59 thousand fewer people living on the Prairies in 1946 than in 1941. Nearly all of the decline in numbers occurred in the Province of Saskatchewan. Alberta showed a slight gain.

The decline² in farm population is neither new nor peculiar to the prairie region. The wartime expansion of non-agricultural industries merely speeded up the existing movement towards towns and cities and toward industrialized sections of Canada, due to greater opportunities for jobs there as compared with the agricultural regions. War industries drew surplus manpower from the farms. Thousands of men and women left the prairie farms, villages, towns and cities, to work in the war plants in British Columbia, Ontario and Quebec. The shifts from agriculture, during the five years, were quite distinct, for there has been almost no counter-movement.

¹ Inventory taking of prairie agriculture was completed in the summer of 1946 and the balance sheet is now being published. The stock-taking firm was the Dominion Bureau of Statistics. Their enumerators visited every farm in the Prairie Provinces. They compiled information on the number of farms, the number of people on farms, their sex, their ages, the acreage, crops, livestock, capital value, indebtedness, and many other facts. This article is based mainly on Census data and statistics published by the Agricultural Division of the Dominion Bureau of Statistics.

² The number of people living on farms in Manitoba, Saskatchewan and Alberta declined by about 145,000, or nearly 13 per cent, in the period between 1941 and 1946.

In spite of the decline in numbers of farm people, agricultural output was increased during this period. This was possible because of the longer working day and more effective use of the manpower left on farms. Manpower controls were utilized under the National Selective Service policy. These controls included, among other things, (a) a stabilization of the farm working force by requiring all workers to remain in agriculture unless they received permission from National Selective Service officials to secure employment elsewhere, and by granting postponement of military training to farm workers whose services were essential to agriculture; (b) organized movements of farm workers who could be spared, temporarily, from one province to help in another province; (c) encouragement of greater exchange of co-operative use of local labour; (d) introduction of labour-saving devices; and (e) international exchange of farm labour with the United States.

The 1946 Census shows that nearly 270 thousand farmers in Manitoba, Saskatchewan and Alberta farmed 117·5 million acres of land in an area extending from the western border of the Province of Ontario to the Rockies, and from the United States border as far north as the Peace River country in the Province of Alberta. These farmers had a capital investment in land, buildings, livestock, implements and machinery, valued at \$2·7 billion. They had nearly 42 million acres of the Prairies in crop. The total livestock population numbered 8·1 million head, and their total poultry population was counted at 28·7 million birds.

These 270 thousand farmers owned equipment valued at \$483·5 million. They had, among other things, 153 thousand tractors, 55 thousand trucks, and 37,800 grain combines. Prairie farmers, in the six years, 1941 to 1946, purchased over \$200 million worth of farm machinery. The number of farms, for example, reporting tractors increased by 32 per cent between the two census years, but the number of tractors on these farms increased by 36 per cent. On the other hand, the number of horses declined by about 28 per cent in the same period.

Let us reduce some of this 1946 information to a single farm basis. *What is a farm?* "A farm", according to the Dominion Bureau of Statistics, "for census purposes, is all the land located in one municipality which is directly farmed by one person conducting agricultural operations, either by his own labour or with the assistance of members of his household or of hired employees. It may consist of a single tract of land, or of a number of separate tracts held under different tenures. In order to be reported as a farm, such land must be of one acre or more in extent and have produced, in 1945, agricultural products to the value of \$50 or more, or be under crops or employed for pasture in 1946." The average size of the farm was nearly 436 acres, of which 154 acres were under crop. The average numbers of livestock per farm were: five horses, 14 head of cattle, four sheep, and seven pigs. The average farm flock of poultry had over 100 birds. It should, however, be remembered that many farms have no livestock at all, and others are highly specialized enterprises. The size of the average farm unit is reflected in the relatively large investment per farm. The average value of farm capital was \$9,951 per farm, the largest share of which was invested in land. The farm family averaged nearly four persons in 1946.

Net value of agricultural production¹ per farm was estimated at \$3,018, and per capita, \$811. Increased agricultural production, higher farm prices, and the departure of many workers out of agriculture, resulted in estimated

¹ The Agricultural Division of the Dominion Bureau of Statistics defines the net value of agricultural production as the value of agricultural production left in producers' hands after deducting the cost of raw materials used in the production process. It gives consideration to *only* the costs of raw materials used in production and *excludes* such expense items as taxes, farm rent, wages paid to labour, interest charges on farm indebtedness and depreciation charges on buildings and machinery—items which are considered together with the raw material costs in determining net income.

farm earnings per farm and per capita being raised. Net farm income¹ per farm was \$2,319, and per capita, \$623.

The size of the average farm in the Prairie Provinces has always been large compared with farms in other provinces. At the beginning of the twentieth century, an abundant supply of cheap land, well adapted to cereal production, was available. When such land was combined with scarce manpower throughout the period of settlement, and with large-scale labour-saving machinery, the result was extensive rather than intensive cultivation. Improvements in farm implements, especially the tractor, together with the introduction of the combine, intensified the trend toward mechanization in grain production, a trend which could be utilized to the best advantage only on the larger farms.

Larger but fewer farms were scattered over the farmlands on the Prairies in 1946 than in 1941. The number of farms in the three provinces declined from 296,469 to 269,646, or nine per cent. The average size of the prairie farm was nearly 436 acres in 1946 as compared with 405 acres in 1941. But few farms are average farms. Although 30 per cent of all farms in the prairies were between 300 and 479 acres in size, there were, at one extreme, over 16 thousand farms having one hundred or less acres of land and, at the other extreme, 19 thousand farms with more than 960 acres per farm. The number of farms in the size group of 960 to 1,279 acres showed the greatest relative increase in the 1941-46 period—nine per cent. The average size of a farm in Saskatchewan was 473 acres. This was slightly larger than the Alberta farm and much larger than the Manitoba farm.

Changes in the kind of farm produce raised on the Prairies, in the years between 1941 and 1946, have been notable. Wartime needs influenced the pattern of prairie agriculture in the period between the two census years. On the whole, the wartime agricultural policy was designed to bring about increased production of desired products as the need arose. The program was focused upon the land which was already under cultivation and on ways in which the individual farmer could use his resources to the best advantage in producing needed foods. Adjustments which could be made in production fell essentially in two categories: (a) increasing total production, (b) shifting the land use. Thus, during the war years, while increased output was the rule in all parts of the country, the most continuous expansion took place in the Prairie Provinces where the increase in feed grains, poultry, eggs and beef cattle was large and that of hogs phenomenal. The relatively greater increase in the West was possible because of the very considerable shift from wheat growing to more diversified farming. This shift was due, for the most part, to the lack of sufficient markets for wheat, the Wheat Acreage Reduction Program, and low prices for wheat during a period when the prices of livestock and livestock products were rising. By 1944, because of improved wheat prices, there was an increase in wheat acreage and by the first quarter of 1945, hog production began to show a decline.

The change in prairie agriculture was thus not fundamental or permanent. By 1945, prairie farmers showed a strong tendency toward increased wheat growing. Better returns from the sale of wheat and barley, in relation to hog returns, resulted in a shift from hog production to grain production.² In 1946, the 270 thousand prairie farmers had 41.6 million acres planted to field crops, nearly nine per cent more than the 296 thousand farmers

¹ The Agricultural Division, of the Dominion Bureau of Statistics, defines net farm income of farm operators and their families as gross income less operating expenses and depreciation charges. It represents payments for the managerial services of the operator, the labour of the operator and his family, together with interest on the capital invested in farm land, buildings, livestock and equipment.

² The impact of World War II upon prairie agriculture was not as marked as that of World War I. In the Prairie Provinces the acreage under wheat in 1919 was about 80 per cent greater than it had been in 1914. The high prices of the war and immediate post-war period, together with government propaganda, induced a rapid extension of wheat acreage, in spite of frequently unfavourable climatic conditions.

had in 1941.¹ Wheat, of course, was the most important crop, with about 22.6 million acres seeded in 1946, as compared with 16 million acres in 1943. Some of the new crops that showed a proportionately large increase in acreage in the five-year period were barley, peas, alfalfa, sunflower seed, and rape seed.

The Province of Saskatchewan is the most important of the three Prairie Provinces as a producer of field crops. However, when it comes to livestock, Alberta is the leader. The number of cattle on farms in the three provinces increased between 1941 and 1946 by 19 per cent; the number of pigs declined by 44 per cent; and the number of hens and chickens increased by 14 per cent. The census data do not reflect the remarkable expansion in swine production that occurred on the Prairies during the war years between 1941 and 1946, because by 1944 numbers of swine on prairie farms were on the decline. In the peak year, 1943, there were nearly five million hogs on prairie farms.

The Census data reveal interesting changes in the pattern of output of animal products on farms. In 1945, four per cent fewer cows were milked, and nearly 11 per cent less milk produced than in 1940. But sales of fluid milk and cream were higher. These gains were made at the expense of dairy butter and farm produced cheese. Farm sales of dairy butter and cheese dropped by 89 per cent and 45 per cent, respectively. Wartime subsidy policies were, in part, responsible for the accelerated shift in production of processed dairy products from the farm to the creamery and cheese factory.

Egg production and egg sales were up considerably. The relative increase in sales was greater (46 per cent). Higher prices and a strong demand encouraged greater care in collecting and marketing eggs.

Net value of agricultural production in the three provinces, according to estimates released by the Agricultural Division, of the Dominion Bureau of Statistics, increased from \$312.8 million in 1941 to \$813.8 million in 1946. The latter total was slightly below the 1944 wartime high.

Cash income during this same period, according to the Dominion Bureau of Statistics, increased by about 115 per cent to \$855 million. Cash income from sale of wheat was relatively just as important in 1946 as in 1941. In the in-between years, wheat was not as important a source of income.

However, the size of the net income determines whether a farmer stays solvent. Net income in the years between 1941 and 1946 increased from \$250 million to \$625 million. This increase is, in part, due to higher production; in part, due to higher prices for farm products; and, in part, due to price control and subsidy programs as it applied to costs of goods and services used by farmers.

The farm business on the prairies, and in Canada as a whole, even while responding to wartime activities, seemed to have been conservatively managed. Farm owner-operators on the Prairies succeeded in reducing their mortgage indebtedness on land and buildings to \$83 million (not including agreements for sale), a 52 per cent reduction between 1941 and 1946.

During the same period, the proportion of farms operated by owners had increased. There were fewer tenants and managers. Higher net income, during the war years, enabled many farmers not only to reduce indebtedness, but to own their farms outright, and to add to their acreage.

The current value of farm capital had increased from \$1.9 billion in 1941 to \$2.7 billion in 1946. The largest relative increases occurred in the

¹ The proportion of occupied farm land under crop in 1936 and 1946, according to the Census, was about the same, 35.5 per cent and 35.4 per cent, respectively. There was a decline between 1936 and 1941 and an increase between 1941 and 1946. The actual acreage, however, in 1936 was 40.2 million and in 1946, 41.7 million.

values of buildings and farm machinery. In dollar value, the greatest total increase occurred in Saskatchewan, although in percentage, Manitoba showed the most substantial increase.

To summarize, under the external stimulus of war demand and internal stimulus of domestic policies, an expansion of the industrial and agricultural productive capacity took place. The gross national product increased from \$4 billion in 1938 to almost \$9.5 billion in 1946. Prairie agriculture, as indicated in this brief article, benefited by this expansion. Many of the positive changes in the financial position of farmers in the three provinces were due to the fact that Canadian industrial capacity and manpower were fully utilized.

Although the prairie farmer is financially better off now than he was in 1941, there is still room for improvement. Only 52 per cent of all farms reported owning one or more tractors; only 20 per cent reported having one or more trucks; and about 14 per cent reported possessing grain combines. The small proportion of farmers—four per cent—reporting ownership or possession of electric motors pointedly emphasizes the lack of such equipment.

Farmers have said that they want more machinery. Their farm buildings need to be repaired, repainted or rebuilt. Farm homes lack the many facilities essential to the well-being of the modern farm family. The exigencies of hazardous weather and crop failures have not been solved. Soil conservation is still a big problem. The prairie economy is still subject to the vagaries of the international market. The prosperity of the farmer on the Prairies is still dependent upon a high and stable level of employment and income in Canada. Full employment, a high income and export trade, are prime factors in determining the degree of effective demand for farm products and the level of farm prices in Canada.

FAMILY LIVING LEVELS MEASURED BY STANDARDIZED RURAL SOCIO-ECONOMIC SCALES

MARGARET A. MACNAUGHTON

Consumption economics, concerned with the consumption of wealth, is part of the realm of economics in a broad sense analogous to the economics of production or distribution. Studies in the field of consumption might be divided into three main categories: cost of living, standard of living, and mode of living.

"Cost of living is the money cost of a defined way of living, actual or normative."¹ This is actually the "amount spent on living" as distinguished from a "true cost of living" which would include home produced goods, and durables. Cost of living studies do not measure the content of living as varying degrees of efficiency cause similar costs of input to bring about different contents of output.

The term standard of living is commonly used in two ways (a) the actual current content of the living of the group under consideration and (b) the living insisted upon and actively sought and therefore affecting conduct in various ways.²

The actual mode or manner of living is a function of income or economic power and the standard of the group in question.³

Problems of consumption have been approached by many workers in adjacent fields, particularly sociologists, home economists and statisticians. The emphasis of research has also varied over the years, but is currently being

¹ Kyrk, Hazel. Consumption Studies. In Schultz, Theodore, et. al. *New Research Vistas in Agriculture and Rural Life*. Chicago, University of Chicago Press. To be published shortly.

² Ibid.

³ Ibid.

resolved around basically methodological problems, one of which is to find a single multiple-factor index that will measure levels of living satisfactorily.

The first standardized multiple-factor index of socio-economic status was published in 1925.¹ In 1928, F. Stuart Chapin provided the first comprehensive definition of socio-economic status. A. M. Leahy was another outstanding worker in the field. All these people, however, dealt with urban groups.

Although in several instances these scales have been applied to rural populations, it was not until Sewell's work in 1940² that a standardized measure for farm family socio-economic status appeared. Since then, several studies have appeared, including one by A. R. Mangus and Howard R. Cottam in 1941³, L. B. Snyder and A. H. Anderson in 1944⁴, and Florence M. Edwards in 1946.⁵ It is toward a study of these more recent rural indexes that this paper is directed.

These indexes were all constructed to apply to individual families. Another type of scale has been developed to measure socio-economic status for groups of families, or counties, which has a much broader application. The two outstanding studies of this type, also directed to rural populations, are those of Morris M. Blair in 1930⁶ and Margaret J. Hagood in 1940.⁷

Uses of Scales.—Differences in socio-economic status among families are readily observed by all who study human social behaviour. Chapman and Sims have said:⁸

There is no need to justify any study that has as its objective the construction of an instrument to measure the "vague complex" known as socio-economic status.

The uses of such an instrument are manifold. In studies of rural society, appraisal of the plane of living is often necessary. Social planning in agriculture, education, government and other fields has become an accepted element of modern life. We must have some yardstick with which to measure the effect of any new social plan on the many phases of our mode of life. Many students, however, still assume that differences in socio-economic status are qualitative and hence not subject to measurement.

Differences in socio-economic status so greatly influence the social behaviour of persons that it is necessary to control this factor in studies where other aspects of behaviour are being compared. Objective descriptions of home and district environments are helpful in rural rehabilitation programs, problems of child placement and juvenile delinquency. They also provide a more accurate focus for the direction of agricultural extension and home demonstration projects. A nationwide scale or index could apply to delineation of areas for both administrative and research purposes. It could be used in relating level of living to migration, population pressure, and other agricultural, socio-economic and cultural phenomena.

¹ Chapman, C. and Sims, V. M. *Evaluating Certain Equipment of The Modern Rural Home*. J. of Home Economics 22: 1005-15. 1930.

² Sewell, Wm. H. *The Construction and Standardization of a Scale for the Measurement of the Socio-Economic Status of Oklahoma Farm Families*. Stillwater, Okla. Agric. and Mechan. College, Agric. Exp. Sta. Tech. Bul. 9. April 1940.

³ Mangus, A. R. and Cottam, Howard R. *Level of Living, Social Participation, and Adjustment of Ohio Farm People*. Wooster, Ohio Agric. Exp. Sta. Bul. 624. Sept. 1941.

⁴ Snyder, L. B. and Anderson, A. H. *Determinants of Levels of Living for Farmers of Lancaster County, Neb.* Lincoln, U. of Neb., College of Agric., Exp. Sta. Bul. 368. Sept. 1944.

⁵ Edwards, F. M. *A Scale for Rating Socio-Economic Levels in Rural Western Canada*. Unpublished M.A. Thesis. Chicago, U. of Chicago, Dept. of Sociology. Aug. 1946. The study upon which this thesis was based was conducted by Economics Division of the Dominion Dept. of Agriculture in co-operation with the Provincial Governments and Universities of Alberta and Saskatchewan. A summarized version is published in a bulletin *Farm Family Living in the Prairie Provinces*.

⁶ Blair, Morris M. *Indices of Level of Living for Thirteen Southern States by Counties, 1930*. Stillwater, Okla. Agric. and Mechan. College, Social Science Research Council Bul. 2. July 1939.

⁷ Hagood, Margaret J. *Development of a 1940 Rural-Farm Level of Living Index for Counties*. Rural Sociology 8: 171-180. 1943.

⁸ Chapman, J. C. and Sims, V. M. *The Quantitative Measurement of Certain Aspects of Socio-Economic Status*. J. of Educ. Psychology 16: 380-90. 1925.

Definition of Socio-Economic Status.—The literature shows some variation in definition and as a result there has been conflict in the minds of the public as to the applicability of these scales. One of the broadest definitions has been given by J. S. Davies¹,

The plane of living is best evidenced by outcome rather than intake, by the net effects of consumption under the physical, economic and spiritual conditions in which consumption takes place. The various end results include health, productivity, satisfactions and other subjective and objective entities.

Mangus and Cottam, admitting that "standard" and "level" of living are behaviour and "not a collection of material possessions", go on to say that:² "The level of living is *imputed* from the possession or non-possession of goods, services or statuses."

It should be emphasized that level of living is merely *imputed* from the possession or non-possession of these goods and services. The actual degree to which Davies' "ends" are attained is not measured by these scales. Let us take, for example, one item which appears in most scales, the number of rooms per person. This item may be considered as indicative of the end result, health. However, although we may say that a family with a sufficient number of rooms in their home is more likely to be healthy than one living in cramped quarters, we cannot say with any degree of certainty that the family is healthy. Similarly the possession of a radio indicates a certain economic level in being able to purchase it, and although it is classed as a cultural possession, the degree of cultural attainment gained from its use cannot be gauged. We do not know whether the owners use the radio for jazz and soap operas or symphony and drama. However, we can say that there is a certain favourable indication merely in the fact that the family has spent money on a radio rather than on some other article with absolutely no cultural potentialities.

So, we must go along with Sims when he says:³

It is felt that the possession of the items asked for in the questions is indicative of some more general possession which is called the socio-economic status of the family. If pressed as to what is meant by socio-economic status, one is compelled to answer *that it is whatever this instrument measures*. This, however, is useless subterfuge. The need for some label which is generally interpretable is urgent. By socio-economic status is meant nothing more than the possession or non-possession of traits such as those above mentioned. If these traits are present, presumably the individual has, both from the cultural and economic standpoint, *a more favourable environment than he would if these characteristics were absent*.

The definition which is used as a basis for most studies is that given by F. S. Chapin, a definition in terms that may be brought to the test of objective facts:⁴

The position that an individual or family occupies with reference to *prevailing average standards* of cultural possessions, effective income, material possessions, and participation in the group activities of the community.

Construction of the Scale

Experimental Schedule.—How are the "prevailing average standards" determined, and how are the items obtained for original experimental lists? The following quotations are most informative. Snyder and Anderson of Nebraska say:⁵

¹ Davies, J. S. *Consumption Level; Consumption Standard; Plane of Living; Standard of Living*. J. of Marketing 6: 164. 1941.

² Mangus and Cottam, op. cit., p. 9.

³ Sims, V. M. *The Measurement of Socio-Economic Status*. Bloomington, Ill., Public School Publishing Co. 1928.

⁴ Chapin, F. S. *A Quantitative Scale for Rating the Home and Social Environment of Middle Class Families in an Urban Community*. J. of Educ. Psychology 19: 99-111. 1928.

⁵ Snyder and Anderson, op. cit., p. 4.

Several representative items were *chosen* as significant indexes of level of living and on those items rather than on an exhaustive tabulation of all aspects of rural living, this study is based.

Sewell writes:¹

Over 200 items *believed* to be reflectors of status were collected from sources as other studies of status, housing surveys, and *opinions* of students, home demonstration agents, extension workers and others acquainted with rural life. These items were carefully studied by the writer and his colleagues and all items *deemed* peculiar to a particular area, *ill defined* or *confusing* were discarded.

Mangus and Cottam in similar vein add:²

A measure was prepared by the selection of a list of items . . . the procedure was to select from a preliminary list of a large number of items 77 which *were considered*³ to be the best indicators of level of living of farm people.

Edwards shows little additional basis for her scale:⁴

In 1942 a descriptive study was made of levels of living in the pioneer areas of northern Saskatchewan. From these data, 87 items, *considered* indicative of socio-economic level were chosen to form a preliminary rating scale. Only items which *were objectively measureable* were included.

Although Snyder and Anderson indicated perhaps what ought to be the base of these indexes in an "exhaustive tabulation of all aspects of rural living," it is evident that in each case there has been an *a priori* judgment on the part of the investigators as to what the "prevailing average standards" of Chapin's definition are. There has been, however, an attempt to make this judgment one of experts by consultation with them.

Item Validation.—The lack of external criteria available with which to judge these scales, has made it necessary to resort to the "somewhat dangerous principle of internal consistency"⁵. This principle becomes even more dangerous when we consider that the bases of the scales to which these statistical tests are to be applied were based merely on beliefs and opinions. We must clearly bear in mind the following basic assumptions and limitations:

1. In our present society the status men strive for is defined largely in terms of income, accumulated possessions or spending habits. "These criteria of 'success' constitute a basic pattern of North American culture and must be recognized as an important means of achieving a satisfying life."⁶
2. Selection of scale items must be made from those which are easily available in quantitative and comparable terms.
3. The items may be symptomatic, but there is no indication except general inference as to the degree to which each item is significant in measuring socio-economic status.

Differentiating Capacity of Items.—There are two basic problems underlying the construction of a level of living index.

1. What items "represent" or "indicate" possession of others? These are commonly called "Indicants". The method used to select these has been described above.

¹ Sewell, op. cit., p. 20.

² Mangus and Cottam, op. cit., p. 10.

³ Items considered important by social scientists and extension workers, particularly W. Sewell . . . see basis of his scale above.

⁴ Edwards, op. cit., p. 16.

⁵ Chapin and Sims. *The Quantitative Measurement of Certain Aspects of Socio-Economic Status*. p. 385.

⁶ Mangus and Cottam, op. cit., p. 9.

2. What items will *differentiate* family groups with respect to what they possess or have the use of. When a facility or service is enjoyed by all farmers, its value as a measure of level of living is limited.

Several techniques for determining the differentiating capacity or validity of scale or test items have been developed by research students in education, psychology and sociology. In general, these fall into two classes. The first is based on the correlation of test items with an external criterion. The second involves the correlation of test items with the test as a whole or with an internal criterion. Due to lack of adequate external criteria, recent investigators have been forced to use the second method.

Weighting the Scale.—Perhaps the biggest problem in scale construction and that which offers the greatest challenge statistically is that of determining how to weight the items comprising the scale to make a total score.

Final Scale.—Now let us take a look at the four most recent scales that have been completed. These include Sewell's Oklahoma study of 1940,¹ Mangus and Cottam's work in Ohio published in 1941,² Snyder and Anderson's Nebraska study,³ and Florence Edwards' project in Western Canada.⁴

It should be pointed out that Sewell's scale is the only one which, as it stands, purports to include all the aspects of Chapin's definition:⁵

The position that an individual or family occupies with reference to prevailing average standards of cultural possessions, effective income, material possessions, and participation in the group activities of the community.

Even Sewell eliminated "net spendable income per ammain"⁶ because of the difficulty in determining this figure accurately without a detailed study of family budgets.⁷ Edwards excludes the phrase "effective income" from her definition completely, but all the other aspects purport to be covered in this scale. Although several items relating to social participation appeared in Edwards' preliminary scale, none correlated sufficiently with total score to appear on her final scale. The Ohio study restricts their definition to "materially measurable possessions of all sorts . . . which imply activities that are directed toward the satisfaction of biological requirements and cultural and social needs".⁸ Mangus and Cottam consider social adjustment and social participation separately from level of living, and although they are correlated with it, there is no attempt to combine the three factors into a single scale. The investigators in Nebraska consider that there are five measures of level of living: (1) total living values; (2) cash expenditure for living; (3) selected material possessions; (4) social participation; and (5) cultural possessions. Those included in the scale listed are 3 and 5, material and cultural possessions.

Ideally there should be a standardized scale that could be applied nationwide. An examination of the four scales under consideration readily shows that the representativeness of the items varies from one region to another, although the concept of plane of living everywhere remains the same. In Ohio, an indoor toilet is used as an indicant, while in Nebraska only a "sanitary outdoor privy" appears on the scale. Glass windows are considered significant in Nebraska and are not even mentioned in any other index. Similarly a good basement is considered essential in Edwards' study, due to the cold climate of Saskatchewan and Alberta. These differences may be due to the physical setting of the area, or social or institutional factors.

¹ Sewell, op. cit.

² Mangus and Cottam, op. cit.

³ Snyder and Anderson, op. cit.

⁴ Edwards, op. cit.

⁵ Chapin, op. cit., p. 99.

⁶ An "Ammain" is a type of consumption unit developed by Sydenstricker and King. It is "the gross demand for articles of consumption having a total money value equal to that demanded by an average male in that class, at that age, when his total requirements for expense of maintenance reaches a maximum".

⁷ Sewell, op. cit., p. 42.

⁸ Mangus and Cottam, op. cit., p. 9.

There should also be more standardization of terminology. For example, all three studies presumably are getting at the same thing, yet there are three distinctly different phrasings for one item: "Piano or organ", "Piano", and "One or more musical instruments".

The Ohio study used 57 items, the Nebraska one used 44 items, Sewell's Oklahoma study included 36 items, while Edwards' Western Canada scale had only 27 items. Out of the total of 83 different items included in the four scales, only 12 appeared in all four indexes, 15 were in three scales, 15 appeared twice, while 40 items appeared only once in one or other of the scales.

Sewell has developed a short form¹ of his farm family socio-economic status scale, including fourteen of the most easily obtainable items from the original scale. Item analysis proved that these items possess sharp diagnostic capacity in samples taken from Oklahoma, Kansas, and Louisiana farm populations. The validity of the short scale was established in terms of the very close agreement between the measurement produced by it and that of the original scale.

Scales for Groups of Families or Counties

These scales are limited geographically in their application because the population base for these scales is relatively small and local peculiarities due to physical, social or institutional factors bias them. The data to build a composite scale for the whole nation, based on individual families, at present is not available.

However, using the data available, mainly that contained in the census, two rural indexes have been constructed for counties in the United States. These indexes are, however, not based on individual families but on groups of families. By this method, some of the errors of the other type of scale are minimized, being averaged out to some extent in dealing with groups of families.

Hagood and Ducoff also underline three important facts to be kept in mind when considering these indexes as they differ from those based on individual families.²

1. That an index is not a direct measure of the actual level of living but only an indicant of it.
2. That such an indicant for a county is not of the absolute degree of attainment of some external standard but is expressed in relation to the corresponding degree of attainment for a defined group (e.g., the average of all counties).
3. That the description of level of living here discussed relates only to the average level attained by the specified residence class of the county and not to variations in the level of living present among the individual families or persons.

Hagood and Ducoff have set up three criteria by which to judge items for such a nationwide index. These are very similar to criteria which might be set up for the individual family scales as long as one keeps in mind the much broader population base in this case.³

1. The component should itself indicate possession or consumption of goods or services particularly those which, in addition to their use value per se yield to the possessor a commonly associated status value.
2. The component should represent a larger class of associated items indicating consumption of goods and services some of which may complement or enhance the utility of the chosen item, while others may have quite different types of utility.

¹ Sewell, William H. *A Short Form of the Farm Family Socio-Economic Status Scale*. Rural Sociology 8: 161-170. 1943.

² Hagood and Ducoff. *What Level of Living Indexes Measure*. Amer. Sociological R. 9: 79. Feb. 1944.

³ Ibid, p. 80.

3. The component should indicate possession or consumption of goods or services which are generally sought by all groups and classes of people; that is, the evaluation of these goods and services in the sense of benefits or satisfactions derived should have maximum universality.

The final rural-farm index designed by Hagood¹ has five components, namely: (1) adequacy of housing space, (2) radios, (3) farm income, (4) late model automobiles, (5) schooling completed.

Morris M. Blair has also developed an index of this type for the 13 Southern States.² His farm index included automobiles, radio, telephone, and water piped into homes. His non-farm index by way of comparison includes: non-farm population; automobile; radio; per capita cost of government and homes with values from \$3,000 to \$7,500.

The comprehensiveness of these scales is of necessity limited to the data available in the census, and these by no means encompass the range of phenomena included in the concept level of living. Neither do these characteristics have a uniform relationship to levels of living in different counties.

Summary

In review of some of the basic assumptions and limitations of these scales, as discussed in this paper, we might list the following:

1. There is still some question as to whether or not differences in socio-economic status are qualitative or quantitative.

2. Level of living is merely *imputed* from the possession and non-possession of the goods and services listed in the scales. The actual degree to which any "ends" or "goals" are attained is not measured.

3. In each case there has been an *a priori* judgment on the part of the investigators as to what the "prevailing average standards" of Chapin's definition are, although in some cases a wide field of experts was consulted.

4. Lack of external criteria by which to judge items has forced investigators to fall back on methods of internal consistency to justify inclusion of items in the index. This assumes that the *a priori* judgments of the investigators are an adequate expression of accepted standards, an assumption not fully justified nor statistically proven.

5. Methods used to determine whether or not items differentiate between levels of living assume that items in the scale are distributed normally, although everything seems to suggest a marked skewness since low socio-economic status predominates.

6. With regard to the weighting of scale items, there is no true indication except general inference as to the degree to which each is significant.

7. Differences due to physical setting, social and institutional factors limit application of these scales beyond the areas in which they were constructed.

8. Nationwide scales are at present very limited with respect to the information that is available. Census figures are the main source.

9. It has not been proven conclusively that all the items listed in these scales measure a common factor.

The definition of concepts and testing of hypotheses are carried out in the mature sciences through the use of appropriate instruments of observation and measurement. Scale constructors view their indexes as far from being complete or final instruments of measurement in their field. The perfection of such instruments can proceed only through extensive testing of tentative scales, and comparisons of results obtained by different techniques. Further application of the Edwards' scale is being made by the Dominion Economics Division in a level of living study now being carried on in the provinces

¹ Hagood, op. cit., p. 172.

² Blair, op. cit.

of Alberta and Saskatchewan. Perhaps the most recent application of Sewell's scale is being made in a current study in Tennessee where it is being used as the criterion for classifying families according to income.

If an ideal scale could be constructed, its uses would be many and varied. A very good beginning has been made and although their possibilities have not been fully explored, even now the use of these scales in their particular areas gives a much broader concept of the level of living or socio-economic status than was available before they were constructed and the only information was in terms of income and expenditure.

FARM FAMILY LIVING SURVEYS IN WESTERN CANADA, 1942-43 AND 1947

E. P. REID

Farm family living in three areas of Saskatchewan and Alberta was examined in a survey conducted in 1942 and 1943 by the Economics Division of the Department of Agriculture in co-operation with the universities of those provinces. In the earlier year the survey covered the northern pioneer woodland area of Saskatchewan and was made in connection with a study of the settlers' progress. In 1943, the survey was extended to include farm families in two other areas: (1) an open plains area around and west of the city of Saskatoon and (2) the fertile park belt of west central Alberta between the cities of Red Deer and Wetaskiwin. The total number of records was 622, almost equally divided amongst the three areas. A report on this survey entitled *Farm Living in the Prairie Provinces*¹ was published in March 1947.

In June, July, and August of this year the survey was carried out again in the same three areas, and an attempt was made to visit the same families. Much the same types of information were recorded as for the initial study, including (1) building and farmstead rating; (2) family living expenses for a 12-month period; (3) food habits, including home provision and an examination of adequacy of diet; (4) living habits, including leisure time activities in the family and community, and health and education data; (5) social participation and proximity to community facilities—stores, professional people, recreation. A complete farm management survey of the same farms was again carried out, and net income available for family living expenditure will be reported from the farm business analysis. In addition, information as to family allowance receipt and expenditure was obtained this year at the request of the Department of National Health and Welfare, which is associated in the current survey. A travelling clinic, operated by the Nutrition Division of that Department, examined the members of a large sample of the families and recorded their condition as it reflected nutrition.

A summary statement of the results of the earlier survey is as follows:

"Farm homes were visited in regions which represent three general types of agricultural settlement. One is a stable mixed-farming area among the older settlements of Alberta. Another, on the northern fringe of Saskatchewan's agriculture, is still in a pioneer phase of development. The third, located on the great brown soil zone, is typical of many longer-settled parts of Saskatchewan and Alberta.

"In each of these districts there were families who sustained hardships. In each, some families maintained a comfortable living on the farm. Generally speaking, however, those in the mixed-farming area of central Alberta enjoyed better housing, more home conveniences, and larger expenditures for living. Farm people in the pioneer areas were much less fortunate in these things. The district visited in central Saskatchewan supported levels of living between the two."²

¹ By Florence M. Edwards. Ottawa, Department of Agriculture. Pub. 787.

² Edwards, op. cit., p. 22.

There was no expectation of discovering any basis for fundamentally amending this statement when the 1947 survey was planned. Rather it was desired to examine each family and each area's families after an interval of four or five years characterized by (1) rising prices for farm products and requirements and (2) the introduction of family allowances midway in the period. It is planned to analyse for the effect of family allowances both (1) by a statistical and accounting analysis of 1942-3 and 1946-7 expenditure patterns, including the expenditure patterns of families not receiving the allowance; and (2) by analysing answers to direct questions as to family allowance, its use and disposal.

The sampling of families in 1942-43 was at random (except for not recording any one-person households) within each of the three areas, selected for their known homogeneity as to soil zone and type of farming. The objective was to enumerate families scattered throughout the areas, representative of nationality, size of family, age of parents, length of settlement, size of business, etc. The sample was tested against census data in respect of size of farm and house structure, and the results suggest that representativeness was attained.¹

For the 1947 survey it was decided to revisit all families of the first survey as far as would be practical. To hold the families constant and to examine for changes in level of living and living habits through a period of time were taken to be the significant considerations. The group of "survivors" was not supplemented by any families for which there was no 1942 or 1943 record. It was believed that, even though the sample would fall below 600 families, the number of records would be sufficient for reliable analysis of the kind contemplated.

There was a "mortality" of 30 per cent of the earlier sample, leaving 420 families interviewed. The "survivors" were more numerous in northern Saskatchewan than in either of the other two areas. Families that had moved away, retired, or left farming mainly accounted for "lost" records in all areas. However, records were obtained from any family in which a son or widow had replaced the retired or deceased operator and from families who had moved from the original farm to another farm within the area. What these adjustments will mean in the analysis and utilization of the sample for the current survey is getting close attention.

The analysis of the 1942-43 survey was based on cross-tabulations and expressions of percentage occurrence of facilities and characteristics. In addition to such published conclusions, however, there was experimental development of level of living scale analysis. This is a technique for scoring families according to their attainments in cultural possessions, material possessions, and participation in group activity in the community. In studies by other agencies the concept of effective income has sometimes been a fourth factor.² Such scales are said to measure "socio-economic status", and any one scale is at the present stage of development in the field, applicable only to the area in which the data were collected from which the scale was constructed. These areas have each some degree of homogeneity as to type of farming and opportunities for attainment in living.

The current survey will permit further work in the development of the level of living scale. This will be a means of describing concisely variations in level of living in the three areas and of measuring the changes in the levels of living of farm families in the four years between the two studies.

In the past, in most studies of farm businesses and families, it has been customary to attach questions on family living to the farm management schedule

¹ Edwards, F. M., Elliott, H. E., and Turnbull, H. M., *Levels of Living of Farm Families in Representative Rural Areas of Western Canada*. Unpublished report 1945. Ottawa, Department of Agriculture.

² See F. Stuart Chapin. *A Quantitative Scale for Rating the House and Social Environment of Middle Class Families in an Urban Community*. *J. of Psychology*, Feb. 1928.

in order that the fiscal summary should not appear to be too impersonal a measure of human attainment. The Western Canadian surveys of the Canadian Pioneer Problems Committee in the early 1930's did put a little more emphasis on the social aspects of the farm family. With the 1947 survey it is felt that level of living studies have attained maturity, and although a farm management study was conducted in the same area at the same time, it was only complementary to the level of living study.

CONSUMPTION OF FOOD BY FAMILIES ON FARMS, MARITIME PROVINCES, 1945-46

C. I. JOHNSTON

In 1936 the Mixed Committee of the League of Nations on the Relation of Nutrition to Health, Agriculture and Economic Policy advised that governments set up national nutrition committees, part of whose work would be to promote surveys to ascertain the actual consumption of food by the various income and occupational groups of their respective countries. Committees of the Canadian Council on Nutrition, which was formed in 1937, have adopted from time to time such resolutions as, "It is desirable that the nutritional status of rural populations be studied and that surveys be undertaken for this purpose as soon as possible". In 1944, however, information as to diets of Canadian rural people was still so meagre that the Subcommittee on Agricultural Policy of the Advisory Committee on Reconstruction was compelled to describe the state of nutrition in Canada in these words, "There is sufficient evidence of malnutrition in Canada to indicate that a greater quantity and a greater variety of food should be consumed. This is true for (the) city population and may be true for (the) farm population also".

In order, (a) to determine the adequacy of the food consumed by farm families in general and by particular groups of them; (b) to measure the extent to which such families are their own food suppliers, not only because food is generally more healthful the nearer it is consumed to its source, but because home supplied food is obtained at cost to them; and, (c) to provide information as to the potential demand of those families for farm products of regions of Canada other than their own, the Economics Division of the Dominion Department of Agriculture collaborated with the Nutrition Division, Department of National Health and Welfare in a survey in the Maritime Provinces. The Provincial Departments of Agriculture and of Health in each of the three provinces co-operated.

On the advice of the Survey Committee of the Canadian Council on Nutrition, the survey was carried on by the interview-questionnaire method at two seasons and by mailed questionnaire in the winter, within one year in each province during the period August, 1945, to August, 1946. The questions asked pertained to: (a) information about the family, farm and amenities, necessary for classifying the families; (b) quantity, source and retail value of all the kinds of food consumed in the week immediately prior to the report; and (c) food habits of individual members of the family. As the same families were approached at each season it was necessary to obtain information of type (a) only once. In compiling the data, the Economics Division has dealt with sections (a) and (b), while the Nutrition Division, Department of National Health and Welfare, has taken the responsibility for the food habits section.

With the assistance of the Dominion Bureau of Statistics a method of stratified sampling was devised to provide for reports from 600 families or approximately 0.8 per cent of the 73,881 occupied farms of the Maritime Provinces as at June, 1941. Stratification was based on: farm type, presence of urban areas, gross farm income, national origin, school attendance, avail-

ability of occupations alternative to farming, and geographic position. Since such data were obtained from the 1941 census they applied to farms "of one acre or more in extent which produced in 1940, agricultural products to the value of \$50 or more, or had been under crops or employed for pasture in 1941". In Prince Edward Island and Nova Scotia the areas originally designated were used, for the most part, but the sample within those areas was selected in conformity with the opinion of the local agricultural officers as to representativeness of households defined as those "in which the main source of income of the family is agricultural products and the supplementary sources of income, fishing, forestry or other part-time employment, do not exceed one-half of the estimated income of the household". Because of the above difference in definition of farm family used in Prince Edward Island and Nova Scotia from that used in New Brunswick, the findings of the survey for the former provinces must be treated separately from those of the latter.

The field work was under the direction of the Economics Division and the interviewers were members of the staffs of that Division, the Nutrition Division, Department of National Health and Welfare and of the Provincial Departments of Agriculture and Health. In the first period of field work a home economist of Consumer Service Section, Dominion Marketing Service, and in the second, the Provincial Director of Nutrition Services, Red Cross Society, assisted in New Brunswick. Records were obtained as follows:

—	First Season Interview	Second Season Mail	Third Season Interview
Prince Edward Island.....	93	68 ^a	89
Nova Scotia.....	237	128	213
New Brunswick.....	256	148	236

^a Including 29 supplementary records obtained by interview in May.

The families included in the survey were classified as to geographic position, household composition, type of farm, level of living, national origin, education of operator and wife, their participation in farm and home organizations, retail value of all the food consumed per person and per food expenditure-unit per week, percentage of the retail value of the food consumed by the family which was home produced, and percentage of the weight of food consumed which was home produced. The amounts of food consumed by groups classified as above have been tabulated, but the data presented in this article are confined to seasonal consumption by provinces.

When the survey was undertaken it was intended to convert the food consumed to the common denominators, carbohydrate, fat, protein, minerals and vitamins by the use of tables of food values. The Technical Committee, Canadian Council on Nutrition, recommended, however, that the reduction to nutrients should not be made, but that the food should be classified on the basis of that of the studies of "Food Consumption Levels in the United States, Canada and the United Kingdom".

In the footnotes to Table 1 the times of record at the different seasons for the provinces are stated. The "winter" periods of Prince Edward Island and Nova Scotia coincided more closely than did the other seasons and rates of consumption in both provinces were highest in winter, of: the poultry, game and fish group, (high consumption of cured fish being the chief cause), fats and oils, pulses and nuts, tomatoes and citrus fruit (because of the large

quantities of canned tomatoes and juice used) and beverages.¹ (On the other hand milk solids and potatoes were reported in lowest amounts at that season.)

TABLE 1.—FOOD CONSUMED PER PERSON PER WEEK BY FAMILIES ON FARMS¹ IN PRINCE EDWARD ISLAND AND NOVA SCOTIA, SURVEY, 1945-1946

KIND OF FOOD	POUNDS PER PERSON PER WEEK RETAIL WEIGHT EXCEPT AS SPECIFIED					
	SEASON					
	1		2		3	
	P.E.I. ^a	N.S. ^b	P.E.I. ^c	N.S. ^d	P.E.I. ^e	N.S. ^f
	lb.	lb.	lb.	lb.	lb.	lb.
Milk solids.....	1.64	1.75	1.47	1.56	1.78	1.68
Meat, carcass weight.....	2.10	1.31	1.91	2.43	1.86	1.65
Poultry, game and fish, edible weight..	.64	.67	.72	.83	.59	.78
Eggs.....	.83	.77	.90	.73	.86	.93
Fats and oils, fat content.....	.67	.62	.69	.68	.67	.63
Sugars and syrups, sugar content.....	1.05	.94	1.05	1.18	1.09	1.06
Potatoes and sweet-potatoes.....	7.51	5.90	4.34	4.90	5.70	6.30
Pulses and nuts.....	.21	.26	.26	.37	.16	.28
Tomatoes and citrus fruit, fresh equivalent.....	1.16	1.64	1.55	1.81	1.16	1.68
Other fruit, fresh equivalent.....	4.17	2.61	3.17	3.90	2.35	2.28
Leafy green and yellow vegetables, fresh equivalent.....	2.74	3.75	1.37	2.59	1.38	1.60
Other vegetables, fresh equivalent.....	3.62	3.50	2.65	1.97	.70	1.64
Grain products.....	4.99	4.65	5.08	4.64	5.06	4.52
Tea, coffee (green beans) and cocoa (raw beans).....	.16	ε	.18	ε	.15	ε

¹ Households in which the main source of income of the family is agricultural products and the supplementary sources of income, fishing, forestry or other part-time employment, do not exceed one-half of the estimated income of the household.

^a October

^b August-October

^c February-May

^d February-April

^e July-August

^f May

ε Not converted to forms listed.

TABLE 2.—FOOD CONSUMED PER PERSON PER WEEK BY FAMILIES ON FARMS² IN NEW BRUNSWICK, SURVEY, 1945-46

KIND OF FOOD	POUNDS PER PERSON PER WEEK RETAIL WEIGHT EXCEPT AS SPECIFIED		
	SEASON		
	1 ^a	2 ^b	3 ^c
	lb.	lb.	lb.
Milk solids.....	1.42	1.15	1.51
Meat, carcass weight.....	1.35	1.83	1.44
Poultry, game and fish, edible weight.....	.65	.68	.51
Eggs.....	.49	.57	.64
Fats and oils, fat content.....	.75	.63	.71
Sugars and syrups, sugar content.....	1.05	1.16	1.12
Potatoes and sweet-potatoes.....	6.55	5.91	6.89
Pulses and nuts.....	.34	.40	.21
Tomatoes and citrus fruit, fresh equivalent.....	1.06	1.57	1.09
Other fruit, fresh equivalent.....	3.30	2.79	2.12
Leafy, green and yellow vegetables, fresh equivalent.....	2.30	1.35	1.94
Other vegetables, fresh equivalent.....	1.69	1.72	.72
Grain products.....	5.14	5.29	4.85
Tea, coffee (green beans), and cocoa (raw beans).....	.14	.16	.14

¹ Although the beverages consumed in Nova Scotia were not converted to the forms listed their consumption at different seasons may be compared.

² Of one acre or more in extent and having produced in 1940 agricultural products to the value of \$50 or more, or having been under crops or employed for pasture in 1941.

^a September (5 records)—November. ^b February-April. ^c July-August.

Other food groups and the periods in which their consumption was particularly high were: milk solids, summer in Prince Edward Island and summer-fall in Nova Scotia; meat, winter in Nova Scotia; eggs, spring in Nova Scotia; sugars and syrups, winter in Nova Scotia; potatoes, fall in Prince Edward Island and spring (when other vegetables were scarce) in Nova Scotia; fruit other than citrus, fall in Prince Edward Island and winter in Nova Scotia, (few records were obtained in Nova Scotia at a time when fresh fruit was in season); all vegetables, fall in Prince Edward Island and summer-fall in Nova Scotia.

As twenty-one meals of any kind were treated as a person-week and as the Prince Edward Island interviews were made during potato harvesting in October when many hired helpers obtained only dinners and suppers with the family interviewed, when meat, potatoes and other vegetables were eaten, and were absent for breakfasts when those foods were not usually served, the rates of consumption in the first season for that province of meat, potatoes and other vegetables are somewhat distorted upward.

The seasons of highest consumption in New Brunswick were: milk solids, summer; meat (but game was used in much larger quantity in the fall), winter; poultry, game and fish, winter; eggs, summer (no records were obtained in New Brunswick in May, one of the peak months in egg production); fats and oils, fall; sugars and syrups, winter (small range); potatoes, summer, (many old potatoes were being used at the time of the survey and possibly there was much waste); pulses and nuts, winter; tomatoes and citrus fruit, winter; other fruit, fall; leafy, green and yellow vegetables, fall; other vegetables, winter and fall; grain products, winter and fall; beverages, winter.

Generally, the rates of consumption of the foods producible on farms, such as milk, meat, eggs, vegetables and fruit, were used in greatest quantity at the season of their greatest production, showing a considerable dependence on home produced foods. This was true for the sample of farms in New Brunswick, even though they represented less "real" farms than did the sample in the other two provinces.

Although consumption was higher in winter than in the other seasons, whether spring, summer or fall, of approximately half the food groups, in a number, even in those heat-providing foods such as fats, sugars and grains, the range in consumption was small, and availability of certain foods was on the whole a stronger influence in seasonal consumption than was temperature.

CANADIAN AGRICULTURAL PROGRAM FOR 1948¹

During the first week in December officials of the Department of Agriculture and other Dominion Government Departments met in Ottawa with representatives of the Provincial Departments of Agriculture and the Canadian Federation of Agriculture to discuss the Canadian Agricultural Program for 1948.

In reports presented at the Conference, a high level of employment and income in Canada was anticipated for the coming year, with a strong domestic demand for most farm products. Early in January the revised contracts with the United Kingdom for livestock and livestock products were announced. In general these were revised downward in quantity to take into consideration the lower supplies that were expected to be available for export in 1948. The contract prices of these products have been increased over those in effect in 1947. These contracts, along with the wheat contract, assure a steady export demand through 1948 for the main agricultural products of which Canada has exportable surpluses.

At the Conference it was decided that the balance of production arrived at in Canadian agriculture in 1947 should be maintained in 1948.

¹ Summary prepared by John A. Dawson.

In regard to the 1948 field crop program, opinions expressed at the Conference indicated that farmers might well plan on the basis of 1947 production. Consideration, however, should be given to the fact that in eastern Canada the 1947 planting of coarse grains was greatly hampered by unseasonable weather. In view of this, increased acreages of these grains in eastern Canada may reasonably be anticipated. The quantity of wheat from the 1948 crop to be shipped under the United Kingdom contract is 140 million bushels as compared with 160 million bushels from the 1947 crop. The contract price for the 1948-49 shipments was increased from the present price of \$1.55 to \$2.00 per bushel (basis in store Fort William).

There has been a general decline in total meat production from the record level of 1944 and it is estimated that the 1948 production will be slightly below that of 1947. The quantity of pork products available for export is expected to decline in 1948. As a result, the quantity of bacon contracted for in 1948 with the United Kingdom has been revised downward to 195 million pounds and the price increased to \$36 from the 1947 price of \$29 per 100 pounds for Grade A Wiltshire sides. During 1948 increased quantities of beef are likely to be available for export. The quantity to be shipped during 1948 is estimated at 45 million pounds. The prices are increased, with 100 pounds of Red Brand beef bringing \$27.50 in 1948 as compared with \$24.25 in 1947.

In 1947 production of all dairy products was above the 1935-39 average level with the exception of cheddar cheese, which reached a high point in 1945 and has since been decreasing. The uptrend in creamery butter production is expected to continue in 1948, while a further decline in cheese production is anticipated. The quantity of cheese contracted for with the United Kingdom has been lowered to 50 million pounds, while the price has been increased from 25 cents to 30 cents per pound.

The 1948 egg production will likely be close to the 1947 level and sufficient to supply the domestic market and, in addition, 80 million dozen to fill the 1948 United Kingdom contract. The prices are to increase 5 cents a dozen over the 1947 spring price and $3\frac{1}{2}$ cents a dozen over the 1947 fall price.

In general other agricultural production in Canada was sufficient in 1947 to supply the demand without creating surpluses. However, in some particular cases, such as soybeans and husking corn, the production should be increased in order to lessen the dependence on imports from the United States.

With a strong demand and higher prices for many Canadian farm products in 1948, the gross farm income will likely be above that of 1947. However, higher operating expenditures are also anticipated. The fertilizer prices quoted for the spring of 1948 by the companies are considerably above the 1947 level. The supply in Canada of most fertilizers is likely to be sufficient, although there may be some shortage of 11-48 ammonium phosphate in western Canada. The livestock farmer will be affected by the increase in feed grain prices since the ceilings were removed in October, 1947. In regard to farm machinery, there is still a wide gap throughout the world between supply and demand. However, the situation has improved during 1947 and increased supplies are expected to be available in this country in 1948. The Dominion-Provincial Farm Labour Agreements, which have been in effect since 1942, will be continued in 1948. These agreements will assist in making available an adequate farm labour supply during the coming year.

REVIEW OF LITERATURE

KELLEY, Truman Lee, *Fundamentals of Statistics*

Cambridge, Massachusetts, Harvard University Press. 1947. pp. XVI + 755

In the words of the author, "the endeavour herein has been to place a great emphasis upon the logic and principles underlying the statistical study of phenomena, to provide, in the early chapters, such basic issues as will integrate thoughtful and investigative moods with statistical processes, and, in the later chapters, to give such treatment of modern processes as is required in handling many experimental situations and as will open to the reader the wealth of thought in current statistical literature". In the opinion of this reviewer, the author has succeeded in his endeavour to emphasize the logic and principles underlying statistical study. This aspect of statistics, which is too often neglected in both elementary and advanced textbooks, is of vital importance if statistical analysis as a tool is to perform its functions properly. These functions are stated as: (1) descriptive; (2) enabling analysis in harmony with hypothesis; and (3) suggesting further analysis by the nature of the basic data.

The author has organized the contents of his textbook along the lines of these functions. Early chapters are concerned with such methods of description as the preparation of charts and tables, and measures of variability and central tendencies. A chapter is devoted to the normal distribution, its description, the circumstances under which it exists and its place in statistical analysis. Succeeding chapters deal with the statistics of attributes, correlation and sundry statistical issues and procedures. In the chapter entitled "Mathematics, the Mentor of Statistical Ingenuity" numerous series, theorems and techniques are set out which are of value in advanced analysis.

This volume is a contribution which should be a *must* reference for college students and will be a valuable addition to the library of the research worker.

KIRK, Dudley. *Europe's Population in the Interwar Years*

Princeton, N.J., Princeton University Press. Series of League of Nations Publications, Economic and Financial, 1946. II A. 8. p. XII + 303 (11 Chapters, 5 appendices, 19 tables, 52 maps and charts).

This study draws together in a single volume a synthesis of the major facts appearing in census and vital statistics of the 27 European countries existing in the inter-war period. This statistical synthesis serves as the basis for an analysis of the major demographic trends and their close casual connection with the underlying forces of cultural change in modern Europe. This study views Europe in a single stream of development transcending many of the more devious political and ethnic conflicts. As the author points out in his introduction, "the objective of the present study is no less to present data than to indicate their significance in a logical structure".

The chapter headings indicate the breadth and scope of the discussion: Population Distribution; Population Change; The Balance of Births and Deaths; Overseas Migration; International Migration within Europe; Internal Migration; The Balance of Migration and Migration as a Factor in Population Growth; Social and Economic Development; Ethnic Diversity; Europe's Population in a Changing World.

THE STATISTICS REPORT ON THE OCCURRENCE OF NON-FATAL ACCIDENTS AND FIRES ON CANADIAN FARMS¹

This report consists of two parts. One part deals with farm accidents and the other part with farm fires.

Farm Accidents.—This survey was confined to non-fatal accidents involving the loss to the injured person of one day or more of regular activity. An estimated 37,200 farm accidents occurred in all Canada during the year, involving the loss of over one million man days.

The greatest number of accidents occurred in the Prairie Provinces and the relative frequency of farm accidents is greatest there, while Quebec is relatively the safest region. From the point of view of agricultural production, the accidental injury of persons of working age is more serious than accidents which happen to either young people or old people. Almost one-third of all farm accident victims were between the ages of 25 and 44.

When a classification of accidents was made on the basis of cause, the most common cause was found to be falling. Horses were also the cause of numerous accidents. Accidents resulting in injuries by cutting, piercing or crushing which would be associated with agricultural machinery, are relatively high for the age group, 20 to 44. Although the causes of accidents vary somewhat between regions, the distribution shows a rather remarkable stability. Most accidents of all types occurred in the field rather than in the farm-yard or buildings.

The month of May showed the greatest frequency of accidents.

The importance of farm accidents depends on their seriousness, measured by the physical incapacity resulting from them rather than their mere number. Only 6·7 per cent of the accidents studied resulted in any permanent incapacity. The heads of households sustained fewer accidents than others on the farm but relatively more of those accidents which resulted in permanent total disability. Another measure of the seriousness of farm accidents is the loss of time from the regular activities of the injured persons. These farm accidents caused an estimated loss of time from productive agricultural work substantially in excess of one million man days.

Farm Fires.—There were some 8,000 farm fires in Canada in the period June 1, 1946, to June 1, 1947. As with farm accidents, the Prairie Provinces have the greatest number of farm fires. Heating and cooking equipment caused 23·8 per cent of the fires. Information was collected on the value of the property destroyed in farm fires. It was shown that the loss was great and that a relatively small portion, 36·8 per cent, was covered by insurance. The total value of property destroyed was \$10·3 million.

¹ In response to a request from the Deputy Minister of Agriculture, the Sampling Unit of the Central Research and Development Division of the Dominion Bureau of Statistics conducted a sample survey beginning in June, 1947, to determine the frequency of non-fatal accidents and fires on farms. The number of farm interviews was 11,051, something less than 2 per cent of the total. The questions relating to farm accidents referred to all persons who either lived or worked on the sample farms during the year June 1st, 1946 to June 1st, 1947. Summarized by J. M. Gray, Economics Division, Department of Agriculture.

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THE ECONOMIC SITUATION

The domestic and foreign demand for Canadian agricultural products is expected to remain strong throughout 1948. The strength of the domestic demand is reflected in incomes of industrial workers—their ability to buy the goods they require or want. In the same way, the strength of the foreign demand is closely related to the ability of people of other countries to pay for Canadian products. A continued high level of investment during 1948 in new construction, machinery and equipment may be expected to maintain domestic employment and wages at high levels.

The European Recovery Program of the United States provides for financial assistance to various European countries as well as to China over the next 4½ years. During the first year, more than \$6 billion is to be made available for the purchase of supplies which are necessary for the re-establishment of the receiving countries on a sound economic basis. Through this program, Canada may expect to find an outlet for agricultural and manufactured products which are surplus to domestic requirements.

Agricultural Legislation and Policy.—Amendments to several Acts which are of direct interest to Canadian farmers have recently been passed by Parliament.

The Farm Improvements Loans Act, 1944, provided for Government guarantees to banks making loans to farmers for the purpose of financing farm improvements during the three-year period ending February 29, 1948. An amendment dated February 24, 1948, extends the operation of the Act for a further three years.

The Agricultural Products Act, 1947, extended for a period of one year the Government's wartime authority to enter into bulk purchase agreements with the Government of any country and to enter into contracts for storing or processing agricultural products. An amendment dated March, 1948, extended this Act to March 31, 1949.

The Canadian Wheat Board Act, 1935, was amended in March, 1948, to make provision for increasing the fixed minimum price of \$1.35 per bushel payable to producers selling and delivering wheat to the Board, and to adjust payments to producers who have delivered wheat prior to such increases in order to equalize the amounts received. An increase of 20 cents per bushel on all wheat has been announced and will be paid on all wheat delivered between August 1, 1945 and March 31, 1948. This will augment the income of prairie farmers by \$158 million. Provision was also made for extending the Board's control of interprovincial movements of wheat to include wheat products. This amendment also provided for the extension of the Board's operations to include oats, oat products, barley and barley products.

An International Wheat Agreement was signed by 36 nations, including Canada, early in March. This five-year pact provides for a ceiling of \$2.00 per bushel and a floor of \$1.50 per bushel for the crop year 1948-49, declining to \$1.10 per bushel for the crop year 1952-53. Each of the signing countries has been allotted a quota for export or for import. Canada, the United States and Australia agreed to supply 500 million bushels annually.

ANNUAL AND MONTHLY INDEX NUMBERS
WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES (a)

Year	Wholesale Prices 1935-39=100			Farm Prices of Agricultural Products 1935-39=100	Commodities and Services used by Farmers 1935-39=100		Cost of Living 1935-39=100	
	Farm Products (b)	Field Products (c)	Animal Products (d)		Eight Factors (f)	Eleven Factors (g)	Farm Living Costs (h)	Urban Living Costs (i)
1913							79.6	79.1
1914							82.0	79.7
1915							86.3	80.7
1916							93.6	87.0
1917							111.6	102.4
1918							131.4	115.6
1919							143.0	126.5
1920							170.7	145.4
1921							139.5	129.9
1922					126.9	133.2	127.5	120.4
1923					118.7	128.7	127.9	120.7
1924					122.5	132.6	125.1	118.8
1925					124.3	131.8	123.6	119.8
1926	144.4	158.5	130.2		120.6	129.3	120.9	121.8
1927	138.6	149.4	127.8		120.9	130.1	119.5	119.9
1928	136.3	134.3	138.2		119.4	128.2	118.3	120.5
1929	140.8	137.2	144.4		118.4	127.5	117.4	121.7
1930	119.5	105.8	133.3		105.7	116.3	113.7	120.8
1931	78.9	65.0	92.7		91.8	100.8	103.7	109.1
1932	65.5	60.4	70.5		88.7	93.4	97.7	99.0
1933	69.3	69.3	69.2		88.4	90.0	95.7	94.4
1934	83.5	80.5	86.5		96.8	96.0	97.8	95.6
1935	89.2	84.4	94.1	88.0	95.6	96.0	97.9	96.2
1936	97.9	102.2	93.7	96.9	98.4	98.0	98.3	98.1
1937	117.4	128.9	106.0	119.7	108.5	105.4	102.9	101.2
1938	102.9	100.9	104.8	105.0	101.1	101.5	102.0	102.2
1939	92.6	83.7	101.5	91.8	96.1	99.1	99.5	101.5
1940	96.1	85.4	106.7	96.8	102.3	105.8	108.6	105.6
1941	106.6	88.9	124.4	110.2	108.2	114.2	114.2	111.7
1942	127.1	109.7	144.6	133.1	119.7	128.1	119.2	117.0
1943	145.4	129.0	161.8	157.8	122.4	136.0	121.7	118.4
1944	155.3	144.5	166.1	172.3	125.7	139.9	122.8	118.9
1945	162.8	155.4	170.2	180.7	125.5	142.6	123.2	119.5
1946	171.0	160.9	181.2	192.3	127.6	146.3	127.1	123.6
1947(j)	183.5	166.8	200.2	203.7	138.3	157.4	138.3	135.5
1947								
Jan.	174.0	155.7	192.3	194.6	130.4	148.1	132.2	127.0
Feb.	175.0	156.3	193.7	195.2				127.8
Mar.	176.0	157.3	194.7	197.4				128.9
Apr.	177.4	157.4	197.3	198.2	138.5	158.3	136.1	130.6
May	180.3	162.2	198.4	200.0				133.1
June	181.7	163.6	199.8	203.1				134.9
July	184.2	170.8	197.5	203.2				135.9
Aug.	185.0	170.1	199.8	204.8	145.9	165.8	146.5	136.6
Sept.	188.1	170.3	205.9	208.4				139.4
Oct.	187.5	172.1	202.9	208.5				142.2
Nov.	192.8	181.2	204.4	212.2				143.6
Dec.	200.1	184.0	216.1	218.3				146.0
1948								
Jan.	212.3	185.7	238.8	232.0	167.5	177.3	155.2	148.3
Feb.	210.1	181.8	238.4	231.8				150.1
Mar.	211.0	181.1	240.9	232.2				150.8

(a) All index data computed by Dominion Bureau of Statistics.

(b) Canada. Dominion Bureau of Statistics, Prices Branch. *Wholesale Price Index Numbers of Canadian Farm Products*. (Mimeo). Ottawa. Mar. 1948, and *Prices and Price Indexes*. Mar., 1948. Wholesale prices of products of Canadian farms.

(c) Ibid (b). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid (b). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agricultural Division. *Index Numbers of Farm Prices of Agricultural Products*. (Mimeo). Ottawa. Monthly.(f) Canada. Dominion Bureau of Statistics, Prices Branch. *Price Index Numbers of Commodities and Services Used by Farmers*. (Mimeo). Ottawa. Jan., Apr. and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) Ibid (f).

(i) Canada. Dominion Bureau of Statistics, Prices Branch. *Prices and Price Indexes, 1913-43*. Ottawa. 1945, and (Mimeo) Mar., 1948.

(j) Preliminary

FARM INCOME: CASH AND NET¹

FRANK SHEFRIN

Cash income received by Canadian farmers from the sale of farm products in 1947 totalled an estimated \$2.0 billion². Net farm income for the same year was \$1.26 billion. This is an increase in cash income of 199 per cent since 1938, and 225.4 per cent in net income for the same period. Higher farm prices, increased marketings, and, to some extent, expanded agricultural production, resulted in this greater farm income.

The significance of farm income in relation to the financial structure of the farm lies in the fact that changes in farm income alter the financial structure. In turn, the financial structure helps to determine farm income through its influence on the ability of farmers to adjust their operations to changing conditions of demand and cost. The significance of farm income, in relation to the level of living, is apparent.

Cash farm income estimates are based on reports of marketings and prices received by farmers for the principal farm products. These estimates include the amounts paid on account of wheat participation certificates, the oats and barley equalization payments, and those Dominion and Provincial government payments which farmers receive as subsidies to prices. Payments made under the Wheat Acreage Reduction Act, the Prairie Farm Assistance Act, and the Prairie Farm Income Payments Scheme are not included with cash income from the sale of farm products but are included in the totals in the year in which payment is made under the heading Supplementary Payments. Relief, drought, and other types of assistance payments are not shown in totals for the years prior to 1941.

Net income of farm operators is the result of prices and output, minus expenses. The Agricultural Division of the Dominion Bureau of Statistics defines net farm income of farm operators and their families as gross income less operating expenses and depreciation charges. It represents payments for the managerial services of the operator, the labour of the operator and his family, together with interest on the capital invested in farm land, buildings, livestock and equipment.

Net income of farm operators from farming operations, however, does not represent the total net income accruing to persons on farms because it does not include estimates of non-farm income received by farmers; nor does it include all income arising in agriculture, in that estimates of net farm rent and interest payments on farm indebtedness, which may be received by persons on farms, are not included. It does not include the income of farm labourers who may be living permanently on the farm.

A review of Table 1 shows that cash farm income ranged near the billion dollar mark in the latter half of the twenties, contracted most markedly in the early thirties, and increased rather slowly during the remaining years of the nineteen thirties. It was not until 1942 that cash farm income exceeded the 1928 high of \$1,064 million.

Measured in terms of cash income, Ontario and Saskatchewan are the most important agricultural provinces in Canada. However, the Province of Saskatchewan is dependent mainly on a single crop—wheat—and is, therefore, subject to a greater degree of income instability than Ontario.

Canada's agricultural resources are varied. Her farmers obtain a livelihood from the sale of a large number of farm products. The importance of these products varies from region to region. From the day Canada became an important exporter of agricultural produce, wheat has been a major source of income.

¹ The Agricultural Division of the Dominion Bureau of Statistics has been publishing information on cash farm income since 1926, and on net farm income since 1938. This basic information is being utilized in this article to trace changes, sources, and stability of farm income.

² This includes supplementary payments of \$11.6 million made under the Wheat Acreage Reduction Act, the Prairie Farm Assistance Act, and the Prairie Farm Income Payments Scheme.

However, since 1926, the first year that adequate information on cash income is available, wheat and all grains became relatively less important as a source of cash income. Livestock, fruits and vegetables, in turn, became more important. Thus, in 1926, the sale of wheat provided nearly 44 per cent of all the cash income; by 1946, the percentage was down to 22 per cent. The sale of all livestock products provided nearly 38 per cent of the cash income in 1926, and was up to 55 per cent in 1946. These percentages vary from year to year, depending on output of all commodities, and on demand for specific crops.

Wartime Changes.—Changes in the wartime agricultural production pattern, changes in the nature and volume of domestic and export demand, and changes in farm prices, resulted in significant increases in cash income and net income secured by Canadian farmers from the sale of farm products since 1938.

Cash farm income in Canada increased 157 per cent between 1938 and 1945; net income in the same period increased by 153 per cent. The wartime peak year was 1944, at which time cash income totalled \$1.8 billion. Cash and net farm income increased more than prices received by farmers, and more than wholesale prices of all commodities during this period.

The major factors responsible for the wartime increase in farm income are: (1) the rapid rise in consumer incomes—total disposable income increased by 109 per cent between 1938 and 1945; (2) the increase in domestic demand for farm products—the per capita consumption by weight of all foods increased by 16 per cent between the pre-war period, 1935-39, and 1944, and national expenditures on foodstuffs increased by 105 per cent between 1938 and 1945; (3) the marked expansion in total exports—the total value of exports of Canadian farm produce increased by 324 per cent between 1938 and 1945; (4) the increase in agricultural output and volume of sales.

Sharp increases in farm income from the sale of livestock and livestock products contributed largely to the greater aggregate cash income in the years 1940 to 1943, inclusive. By 1945, and in the following years, grains became a more important factor.

This increased flow of funds into agriculture; as a consequence of wartime circumstances, has been general, but the degree of variation between the levels of 1938 and 1945 has not been uniform by agricultural areas or by provinces. The Provinces of Saskatchewan and Manitoba showed the greatest relative increase in cash income; Nova Scotia, the least. With the exception of the year 1944, the Province of Ontario showed the largest cash farm income, Saskatchewan and Alberta ranking second and third.

The fact that cash farm income in 1946 was 85 per cent higher than in 1926 requires a few qualifying remarks. Cash income has increased considerably, but according to available census data the number of farms increased by only three per cent between 1921 and 1941, and the number of people on farms has declined between 1931 and 1941. Accordingly, returns to the farm and to the individual are higher¹. On the other hand, the need for a higher cash income has increased considerably. In the first place, agricultural income is divided among several groups. These include hired labourers, the holders of mortgages on farm property who receive interest payments, and landlords; the remainder, which goes to the farm operators, is the return for management, operators' labour, capital, and for the labour of farm families. In the second place, technological developments have stimulated commercialization in agriculture, with resultant increased flow of income into and out of the industry. Mechanization of agriculture increased the total investment in equipment on farms, compared with the investment that would be required if horse operations had been

¹ The most recent estimate of per farm and per capita cash income from the sale of farm products is for the three Prairie Provinces. We will use only Manitoba as an illustration. In 1936, the per farm cash income was \$817, and the per capita, \$181. By 1946, per farm cash income was \$3,151, and per capita, \$736. There are no net income figures available for the same period. The Provinces of Saskatchewan and Alberta show the same trend.

TABLE 1.—CASH INCOME FROM THE SALE OF FARM PRODUCTS, CANADA AND PROVINCES,¹
CALENDAR YEARS 1926-1947

Year	Canada	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.
(Million dollars)										
1926.....	958	8	14	16	96	255	90	291	163	25
1927.....	934	8	15	14	96	253	80	271	170	27
1928.....	1,064	8	16	13	107	269	83	322	214	32
1929.....	927	8	16	13	102	265	74	245	171	32
1930.....	632	7	16	13	83	217	48	122	95	30
1931.....	445	4	13	9	62	164	31	71	71	21
1932.....	384	3	10	7	48	123	29	78	69	18
1933.....	397	3	13	7	48	129	32	77	69	19
1934.....	485	4	13	9	60	146	43	93	95	21
1935.....	512	4	14	9	65	155	36	109	99	22
1936.....	578	5	14	10	72	185	47	126	95	23
1937.....	646	6	18	12	86	216	75	84	122	27
1938.....	665	5	18	11	90	219	65	93	134	29
1939.....	723	7	13	12	102	218	65	158	120	28
1940.....	766	7	17	16	121	234	65	151	127	29
1941.....	914	9	20	19	145	287	82	162	154	37
1942.....	1,101	11	22	25	174	356	103	196	169	45
1943.....	1,410	14	26	31	200	386	146	328	220	58
1944.....	1,829	14	28	33	223	405	177	544	338	68
1945.....	1,694	16	27	36	236	453	153	410	288	75
1946.....	1,753	17	34	36	252	473	171	399	285	86
1947.....	1,990	19	33	38	296	546	186	434	345	93

SOURCE: Cash Income from Sale of Farm Products. Agricultural Division, Dominion Bureau of Statistics.

¹ Does not include Supplementary Government Payments made under Prairie Farm Assistance Act, Prairie Farm Income Payments Scheme and Wheat Acreage Reduction Act.

maintained. Operating costs involving expenditures on feed, gasoline, oil, spare parts, and fertilizer, result in greater and more continuous cash outlay.

Numerous functions or activities which were at one time an integral part of the farm enterprise are now carried on in populated centres. Many of the operations of processing and marketing of farm products have been taken over by specialized agencies. There has been, for example, a shift in the manufacture of butter, a function which has come to be performed very largely by commercial agencies rather than on farms. Much of the hauling, once done by farmers themselves, is now done by commercial truckers. These shifts emphasize the need for a greater cash outlay on the part of the farmer.

Household living cash expenditures have also increased considerably. Farmers have become less self-sufficient. More commercially prepared foodstuffs are being bought. The mail order store and catalogue have been supplanting the farm handicraft industry.

TABLE 2.—NET INCOME OF FARM OPERATORS FROM FARMING OPERATIONS, CANADA AND PROVINCES
CALENDAR YEARS 1938-1947

Year	Canada ¹	P.E.I.	N.S.	N.B.	Que.	Ont.	Man. ¹	Sask. ¹	Alta ¹	B.C.
(Million dollars)										
1938.....	387	3	14	7	69	137	35	26	81	15
1939.....	484	4	9	9	82	135	37	118	76	14
1940.....	529	5	12	11	96	142	45	109	94	15
1941.....	597	5	10	13	111	185	58	104	88	23
1942.....	1,104	9	12	20	142	274	107	302	209	29
1943.....	990	10	19	27	174	252	115	210	142	41
1944.....	1,240	9	18	25	179	289	115	364	200	41
1945.....	981	11	16	24	177	318	78	184	122	51
1946.....	1,161	10	23	27	211	333	104	229	170	54
1947.....	1,260	11	19	28	211	343	119	273	203	53

SOURCE: Net Income of Farm Operators from Farming Operations, Canada, 1938 to 1945, and March, 1948. Agricultural Division, Dominion Bureau of Statistics.

¹ Includes Supplementary Payments (P.F.A., P.F.I., W.A.R.), 1939-1947.

Distribution of Income.—Variations in the distribution of income within agriculture, as in other parts of the economy, are wide. Little information, however, is available as to the distribution of cash or net income among farmers.

The totals are available and average per farm or per capita can be estimated. But there are no data as to the number of farmers in Canada having, for example, a cash farm income of \$2,500 or \$5,000, or a net farm income of \$2,500. The Census Division of the Dominion Bureau of Statistics has classified occupied farms on the Prairies for the year 1945 by total value of farm products sold or used¹. Their estimates show that only 28 per cent of all farm-operators in the three prairie provinces reported an income of \$2,500 or more from the sale and use of farm products. When farmers were classified into income groups, two per cent were reported in the \$1 to \$99 group at one extreme, and only 1.3 per cent in the \$10,000 and over group, at the other end. The largest income group, consisting of over 21 per cent of farmers reporting, was in the \$1,500 to \$2,499 bracket. Again it must be emphasized that these are not gross or net income figures, but they do provide some idea of farm income distribution.

TABLE 3.—PERCENTAGE CHANGE FROM YEAR TO YEAR IN CASH FARM INCOME, CANADA, CALENDAR YEARS 1926-1946

Year	Total Grains	Total Livestock and Products	Total Cash Income ¹
	%	%	%
1926			
1927	-6.73	+3.44	-2.46
1928	+20.50	+9.06	+13.89
1929	-24.63	-0.17	-12.89
1930	-49.24	-19.85	-31.77
1931	-39.85	-25.35	-29.58
1932	+13.51	-26.56	-13.85
1933	-1.40	+4.90	+3.39
1934	+24.83	+23.66	+22.38
1935	-1.86	+10.71	+5.36
1936	+9.69	+16.33	+13.09
1937	-0.03	+19.03	+11.66
1938	+15.81	-3.35	+2.88
1939	+12.38	+4.98	+8.73
1940	-12.33	+21.63	+6.03
1941	+1.41	+27.90	+19.34
1942	+4.13	+25.15	+20.46
1943	+65.84	+18.53	+28.02
1944	+75.35	+11.94	+29.72
1945	-24.89	+4.00	-7.02
1946	+3.21	-0.60	+2.54
Average variation	+20.38	+13.86	+14.25

¹ This total does not include Supplementary Payments. These calculations are based on complete figures, not rounded as in Table 1.

Annual Variations in Income.—Agriculture is not nearly as important, relatively, as it was, but it is still the leading single industry in Canada so far as geographical extent and numbers employed are concerned. In August, 1947, about 1.3 million were occupied in agriculture. This represents nearly 26 per cent of the total gainfully occupied population over 14 years of age. The net value of agricultural production² in 1945 was estimated at \$1.3 billion. This is about 21 per cent of the net value of total production. Another primary

¹ The Census classifies each farm according to the value of farm products sold or used by the farm households from June 1, 1945 to May 31, 1946. This does not include income from outside sources, such as farm work off the farm or income from non-agricultural occupations.

The value of farm products sold was enumerated as receipts from sales of all grains, hay and forage crops, potatoes and other root crops, vegetables, fruits, greenhouse and nursery products, seeds, forest products, dairy products, wool, eggs, honey and wax, and livestock, sold between June 1, 1945 and May 31, 1946.

The value of farm products consumed by the farm households is included in the total value of farm products. This includes the value of home grown vegetables and fruits, dairy products, wool, honey and wax, eggs, potatoes, livestock including poultry consumed, and forest products used by all households on the farm.

² According to the Canada Year Book, the net value of agricultural production represents total value less the cost of materials, fuel, purchased electricity and process supplies consumed in the production process.

industry of great importance, forestry, had a net value of production for the same year of \$551 million. In the secondary industries, the net value of production in manufacturing was \$3.6 billion.

Yet, unlike other industries, agriculture continues to be made up of many small units—over 700,000, and these units are usually a place of residence as well as a place of business.

It is under such circumstances that farm income, both in terms of amount and stability, is especially important to the farm and urban people. Erratic fluctuations in farm income have a detrimental effect on the farm as a business enterprise and as a place of residence. Fluctuations in income make it difficult to plan, and extremely hazardous to make long term financial commitments. Thus, if income declines markedly, returns per farm and per farm worker are sharply reduced, good farm practices are often postponed in favour of exploitation of resources, and family living levels are lowered. Instability of income also makes it difficult for the farm-operator to make the necessary adjustments to changing market conditions.

Changes in effective demand, both domestic and foreign, are responsible, in the main, for instability in cash farm income. As a well-known economist has so aptly put it, "The cyclical rise and fall of the demand for farm products associated with business fluctuations has become the dominant factor causing a precipitous rise and fall of farm income."¹

The instability of cash income, in terms of changes, from the preceding year is shown in Table 3. This uneven distribution of cash farm income over time is one of the major problems in agriculture.

Changes in cash farm income from each preceding year during the 21 year period, 1926 to 1946 inclusive, show that these changes range from an increase of almost 30 per cent in income to a decline of 32 per cent. The average of the variations for this period was from +14 per cent to -14 per cent from year to year. A review of the major commodities shows that cash income from the sale of grains is subject to greater fluctuations from year to year than cash income originating in the sale of livestock products.

Instability of cash farm income is a much more acute problem in some sections of Canada than in others. The total cash farm income of a country as large and as varied as Canada, with its variety of types of farming areas, conceals most of the income instability of regions and of individual farms. Natural factors, such as weather, insect pests and disease, introduce many more hazards in some areas and in some types of farming than in others.

In the case of Ontario, cash farm income for the period under discussion, on the average, varied ± 11 per cent from year to year. For Saskatchewan, the average of the variations was ± 26 per cent. Ontario, less dependent on one major crop than Saskatchewan, showed considerably less income instability.

Factors influencing the size of farm income in the short-run are, on the one hand, the volume of goods available for sale and the price per unit, and, on the other hand, the volume of goods desired and the real income of the consuming public. A factor which might be expected to exert a considerable influence upon the amount of farm income over a long period of years is total population. With population numbers increasing, it should be possible to dispose of a greater volume of farm produce, and with little change in the number of farms that means more income per farm. Other factors that may influence farm income through effect on consumer demand are changes in age distribution of the population, and changing tastes partly influenced by size and partly by distribution of total national income.

¹ Schultz, T. W. *Agriculture in an Unstable Economy*. New York, McGraw-Hill. 1945. p. 214.

NOTES ON THE SASKATCHEWAN CO-OPERATIVE CREDIT SOCIETY

G. P. BOUCHER

The economic depression and the severe drought of the early thirties aggravated the problem of indebtedness in Saskatchewan and greatly intensified the need for additional credit to meet loan payments; pay for living expenditures; and defray seeding, harvesting and feeding costs. No adequate supply of credit was forthcoming to meet these demands. Suppliers of credit felt compelled to adopt a more stringent and conservative credit policy. Would-be borrowers could not supply the required securities. Many communities did not even have banking facilities and, in many others, bank services were discontinued during this period. Governmental and private assistance alleviated these economic difficulties but could not be expected to cope fully with the situation.

Various groups and associations, co-operative and other, studied the possibilities of co-operative credit as a palliative to economic difficulties and a solution to the short-term and intermediate credit problem. The Co-operation and Markets Branch of the Saskatchewan Department of Agriculture took the lead and made a thorough study of co-operative credit facilities in other provinces and countries and of their adaptability to Saskatchewan.

The need for short-term credit and organized activity in this direction led to the passage of *The Credit Union Act* in 1937. Credit unions were organized in some communities and soon demonstrated their value as savings and lending institutions. It was soon realized that it was hardly possible for most credit unions to meet all the short and intermediate-term borrowing requirements of their members. In some cases, funds were insufficient to meet heavy seasonal demands while, at other times, there was an accumulation of idle surpluses. Long-term loans could not normally be granted because of the necessity of maintaining a high degree of asset liquidity. Since co-operative organizations were not at that time allowed to join credit unions, any excess funds which these organizations might have accumulated could not possibly be made available to individual members in need of credit.

Faced with this situation, the Saskatchewan co-operative leaders conceived the idea of organizing a central co-operative credit society. It was obvious to these men that a central society made up solely of credit unions might also be faced with the problem of idle funds in one season and shortage of funds in another season. They reasoned that the inclusion of co-operative organizations might minimize seasonal fluctuations and contribute to a better integration of the whole co-operative movement. It was, therefore, decided to widen the membership so as to include associations incorporated under *The Co-operative Associations Act*, *The Co-operative Marketing Associations Act*, *The Mutual Medical and Hospital Benefit Associations Act*, *The Credit Union Act* or any other Act of the Saskatchewan or Federal government dealing with the conduct of business according to co-operative principles.

These ideas were incorporated into a private bill, and on April 8, 1941, the Saskatchewan Legislature passed *An Act to incorporate the Saskatchewan Co-operative Credit Society Limited*. The Society was empowered to conduct a deposit and loan business with its members, to borrow, raise or secure the payment of money as it saw fit, to act as agent, broker, factor, or attorney for others engaged in the same or any other similar business, and to become a member of any federation which might be formed in accordance with the provisions of *The Credit Union Act*. It was also granted all other powers necessary for the efficient conduct of its operations.

Capitalization.—On September 24, 1941, the Society secured a licence to do business, having obtained the required \$15,000 subscriptions to capital stock, with \$10,000 paid-up capital. The authorized capital of the Society was originally fixed at \$100,000, divided into 10,000 shares with a nominal or par value

of \$10 each. This capitalization was raised to \$1,000,000 on November 10, 1944, and to \$5,000,000 on April 1, 1947. The subscribed capital, as at December 31, 1946, amounted to \$405,730 and 99.98 per cent of this amount was paid up. By an amendment to the Act in 1947, the Society was authorized to deposit money in credit unions or companies or associations having objectives similar to those of the Society.

Administration.—Each credit union, association or company, must hold two shares and have fifty per cent of the purchase price thereof paid up, before being allowed to send a delegate to the Society's meetings. The Board of Directors is made up of seven members elected at the general meeting. The directors elect the president and the vice-president from among themselves and appoint the secretary, the treasurer and the manager. The last three may or may not be directors.

TABLE 1.—NUMBER OF MEMBERS, SHARE CAPITAL, DEPOSITS AND LOANS, 1942-47

End of Business Year	Number of Members	Share Capital		Deposits	Loans Outstanding
		Subscribed	Paid up		
		\$	\$	\$	\$
April 30, 1942.....	49	22,790	16,150	2,301	19,372
April 30, 1943.....	82	26,420	23,817	13,172	127,930
April 30, 1944.....	135	83,530	80,960	140,334	271,363
Nov. 30, 1944.....	164	114,220	111,736	364,942	346,007
Nov. 30, 1945.....	209	205,890	203,587	338,489	533,751
Nov. 30, 1946.....	253	341,130	341,029	1,312,192	545,689
Nov. 30, 1947.....	283	635,360	620,310	1,078,274	934,725

The Credit Committee includes the president of the Society, two members elected at the annual general meeting, one member elected by and from the directors, and the treasurer. This committee is responsible for the general supervision of all loans to members, the determination of the amount and rate of interest on each loan, the security requirements and the terms of repayment. Its decisions must conform with orders issued by the Board of Directors and the provisions of the Act of Incorporation.

Deposits.—Shareholders may deposit money with the Society in sums of \$50 or more. These may be withdrawn on any week day, but the Society has the power to ask sixty days' notice before withdrawal. This is a precautionary measure, facilitating the acquisition of the necessary funds of the Society, when faced with large withdrawals of deposits.

Reserves, Interest and Dividends.—It is provided, both in the Act and in the bylaws, that 20 per cent of the net earnings shall be placed in a reserve account until the reserve equals 50 per cent of the paid-up capital. This reserve must be used only against bad loans and other losses. Interest on paid-up capital may be paid up to 5 per cent and the remainder of the surplus may be used as a borrower dividend or placed in reserve accounts.

Development.—Since its formation in 1941, the Saskatchewan Co-operative Credit Society has experienced a rapid rate of development (Table 1). This rapid development is attributable to the existence of many credit unions and other co-operative associations which well understand the need for a central co-operative credit agency, the judicious selection of well-qualified and experienced officials by the Society, the promotion of co-operative enterprise in the province, and the increase in members' income during the war years.

It would appear that the Society has reached a new phase in its activities, that of consolidation and a slower rate of expansion. The main limiting factors will be the rate of growth of existing co-operative associations and credit unions, the establishment of new ones, and the possible inclusion of those which

are not yet members of the Society. On December 31, 1946, for instance, 51 of the 185 credit unions, 99 of the 192 co-operative stores, 33 of the 37 co-operative marketing associations, and some other types of co-operative organizations had not yet secured membership in the Society.

Clearing Privileges.—On April 1, 1944, the Society obtained "non-member clearing privileges" from the Regina Clearing House Association. This enables members to use the checking system for deposit withdrawals. It should also encourage them to leave their seasonal surplus funds on deposit with the Society rather than hold them as cash.

TABLE 2.—DISTRIBUTION OF SHARE CAPITAL ACCORDING TO SIZE OF SUBSCRIPTIONS, DECEMBER 31, 1945

Distribution of Share Capital	Number of Members	Subscribed Capital		Percentage of Total	
		Amount	Average Size	Member	Amount
		\$	\$		
0.00— 19.99.....	5	50	10	2.33	0.02
20.00— 39.99.....	114	2,280	20	53.02	0.87
40.00— 499.99.....	38	4,160	109	17.67	1.59
500.00—4,999.99.....	41	77,610	1,893	19.08	29.62
5,000.00 and over.....	17	177,930	10,408	7.90	67.90
Total.....	215	262,030	1,219	100.00	100.00

Types of Loans.—Credit unions generally limit themselves to small and short-term loans in order to spread their lending facilities over a larger proportion of their membership and maintain a more liquid position. This leaves unsatisfied the demand for large and long-term loans. So far, the Co-operative Credit Society has been able to grant some large loans, but most of these loans were for short periods. With the introduction of *The Co-operative Guarantee Act, 1947*, by which the Saskatchewan Government may guarantee the repayment of half of certain loans, the Society should be in a better position to meet the demand for long-term loans. When in need of cash, it will be able to discount the guarantee with an "approved credit agency". This should also facilitate the maintenance of a reasonable degree of liquidity.

Members' Shareholdings.—Analysis of information relating to the size of subscribed and paid-up share capital held by 215 members at December 31, 1945, shows some interesting facts about the distribution of share capital (Table 2). A little more than half the members (53 per cent) had subscribed for two \$10 shares, the minimum amount required for the privilege of sending a delegate to the general meetings. Their subscriptions represented only 0.9 per cent of the share capital of the Society. Subscriptions averaging \$155 per member and ranging from \$100 to \$499 had been made by 10.2 per cent of the members and represented 1.3 per cent of all share capital. The largest subscriptions exceeded \$5,000 and represented 67.9 per cent of the total subscribed capital. These averaged \$12,105 and were held by 7.9 per cent of the members. Five members had only one \$10 share each, but these were new members or members who had not yet had to call upon the Society's lending facilities. Although the average share per member is \$1,219, this figure would be reduced to \$721 if the six members holding the largest amounts of share capital were omitted. These figures might lead one to believe that a few of the members are in a position to dictate their own views to the Society. However, with the co-operative principles of one member one vote, large shareholders would not have the majority vote. It must also be remembered that the primary concern of these large shareholders is the efficient operation of their own co-operative organizations. By transferring their surplus funds to the Society, they make them available to younger organizations or to organizations which have not been

able to attain the same size or efficiency. Furthermore, the law provides for only a limited repurchase of shares. This should enable the Society to check any undue influence on the part of the largest shareholders, by a threat of withdrawal of funds, since any large withdrawal is impossible. It must also be borne in mind that the Society has been in existence for only a few years and in the future more members will likely be in a position to make larger investments in share capital.

TABLE 3.—DISTRIBUTION OF DEPOSITS ACCORDING TO SIZE, DECEMBER 31, 1945

Distribution of Deposits	Number of Members	Subscribed Capital		Percentage of Total	
		Amount	Average Size	Member	Amount
		\$	\$		
0-00- 19-99.....	110	419	4	51-16	0-12
20-00- 99-99.....	19	843	44	8-83	0-24
100-00-2,999-99.....	53	62,071	1,171	24-65	17-84
3,000-00-9,999-99.....	23	122,933	5,345	10-71	35-33
10,000-00 and over.....	10	161,653	16,165	4-65	46-47
Total.....	215	347,919	1,618	100-00	100-00

Members' Deposits.—Most of the deposits made with the Society were relatively small in size but large deposits made by a relatively small number of members accounted for a high average figure (Table 3). On December 31, 1945, the average deposit was \$1,618 per member, but 110 of the 215 members had deposits averaging only \$4 per member. These 110 members might not even be considered as actual depositors since their deposit accounts were made up mostly of interest, earnings or dividends which had been credited to their accounts instead of being paid in cash money. If these members were eliminated, the average deposit for the remaining 105 members would be \$3,310 per member. Deposits ranging from \$20 to \$99.99 had been made by 19 members, making the average deposit for this group \$44 per member. Ten members had a deposit of \$161,653 which represented 46.5 per cent of the total amount deposited.

TABLE 4.—NUMBER AND AMOUNT OF VARIOUS TYPES OF LOANS 1941-45

Type of Loan	Number	Amount	Average Size	Percentage of Total	
				Number	Amount
		\$	\$		
Demand.....	141	2,682,892	19,028	43-79	46-74
Term.....	122	517,512	4,242	37-89	9-01
Call.....	56	2,533,225	45,236	17-39	44-13
Overdraft.....	3	7,000	2,333	0-93	0-12
Total.....	322	5,740,629	17,828	100-00	100-00

Deposits have a high degree of fluidity due to frequent withdrawals to meet seasonal and other business needs, and also the opening of new accounts or additions to existing ones.

Sizes of Various Types of Loans.—The main distinction between loans made by the Society and those made by credit unions lies in the size of loans. Since the Society only deals with co-operative associations and credit unions, its loans are relatively large. They are usually made for a comparatively short period and may be repaid on demand, on call or after a stipulated period of time.

An analysis of the 322 loans made by the Society during the five-year period 1941-45 reveals that the average loan amounted to \$17,828 (Table 4). Demand loans were generally made for larger amounts than term loans. Term loans were generally made for smaller amounts than other types of loans. Call

loans were made for larger amounts than any other type of loans. These loans were actually short term investments with large co-operatives which were in a position to accept such investments. Only three member associations availed themselves of facilities for lines of credit. Amounts received were \$1,000 for each of two associations and \$5,000 for the other one.

Purposes of Loans.—Applicants' requirements are not the only factor determining the purposes for which loans are made. The amount of money available for loans is also important. Consequently, the purposes for which loans are granted indicates the judgment of the Credit Committee and of the applicants as to which loan demands deserve first consideration.

During the 1941-45 period, the Society provided 112 associations with a line of credit on which they could draw, at more or less regular intervals, for the financing of their operations, amounts being settled periodically. This involved a sum of \$3,632,878 and represented an average of \$32,436 per association. Loans made to supplement working capital numbered 73, amounted to \$1,569,101 and averaged \$21,495 per loan. Credit unions which ran short of loaning funds applied to the Society for a sum of \$78,600. This made up an average of \$1,917 for the 41 credit unions concerned. Loans to newly-formed associations and for the addition of new departments to older established ones amounted to \$313,116; these loans numbered 23 and averaged \$13,614 per loan. There were other loans made for a variety of purposes such as addition to inventories, harvesting requirements, lumbering operations, etc.

Types of Security.—Obtaining adequate security for loans does not usually involve much difficulty since the Society only deals with corporate bodies which may pledge part of their assets. In the case of credit unions, for instance, not only may their assets be pledged in favour of the Credit Society, but the law provides that all loan applications must first meet with the consent of the Registrar of Credit Unions and that no loan can be negotiated for a value exceeding 50 per cent of the combined value of the credit union's shares, deposits and surplus. These provisions greatly enhance the value of any security offered.

Pledges of bonds have been the prevailing type of security. From 1941 to 1945, a total of 129 loans amounting to \$2,780,563 were secured by bonds. This represented 40·0 per cent of all loans made and 48·4 per cent of the total loan value. If the 55 call loans amounting to \$2,518,224 and for which no security was requested (having been made mainly for investment purposes) were excluded, bond securities would account for 48·3 per cent of all loans and 86·3 per cent of the total amount loaned.

This situation may be altered considerably in future years. It is well known that during the World War II period co-operative associations made large investments in Victory Bonds. When these bonds were pledged as security with the Credit Society, lower rates were charged, which explains, at least in part, the high degree of popularity of this type of security.

Relationship Between Borrowings, Shares and Deposits.—To determine the relationship between borrowers' equity in the Society and the size of loans, a study was made of the value of deposits and shares held by the borrowers on the dates loans were granted. This study included all loans made during the 1941-45 period.

Small loans had an exceedingly good coverage. The 44 loans made for less than \$500 were covered by shares representing 385·5 per cent of the value of the loans. All loans made for less than \$3,000 were covered by shares representing approximately 125 per cent of the value of the loans.

For larger loans, however, the share-loan ratio was in reverse proportions, the general trend being for the percentage of share holdings to decrease with an increase in the size of loans. Shares represented from 23·2 to 53·0 per cent of the group value of loans made for sums ranging from \$3,000 to \$24,999 except for a group of loans ranging from \$4,000 to \$4,999, for which shares

TABLE 5.—NUMBER AND AMOUNT OF TERM LOANS, CLASSIFIED BY CONTRACT PERIOD, 1941-45

	Number	Amount	Average Size	Contract Period	Percentage of Total	
				Average	Number	Amount
		\$	\$		%	%
0- 3 months.....	26	82,820	3,185	9 w. 1 day	22.81	17.13
3- 6 ".....	39	60,171	1,543	16 w. 3 days	34.21	12.44
6- 9 ".....	16	27,300	1,706	29 w. 1 day	14.03	5.65
9-12 ".....	3	5,500	1,833	38 w. 4 days	2.63	1.14
12-24 ".....	19	87,650	4,613	65 w. 6 days	16.67	18.13
24 and over.....	11	220,032	20,003	127 w.	9.65	45.51
Total.....	114	483,473	4,241	36 w.	100.0	100.00
No information.....	8	34,039	4,255	.....	.....	.....
Grand Total.....	122	517,512	4,242	.....	.....	.....

represented only 13.5 per cent of the loan value. For loans exceeding \$25,000, there was a marked and consistent tendency for the proportion of share capital to loan value to decrease with an increase in size of loans, shares representing 13.3 per cent of the loan value for loans ranging from \$25,000 to \$49,000 and only 2.5 per cent for loans exceeding \$100,000.

For the 322 loans under consideration, share capital provided a coverage of 14.9 per cent. If this is added to the 18.5 per cent coverage provided by deposits, a total coverage of 33.4 per cent is obtained. Although deposits provided a slightly larger coverage value than shares for all loans, their coverage was much less evenly distributed. No relationship of any kind was apparent between size of deposits and size of loans. The relatively large coverage—41.4 per cent—supplied for loans exceeding \$75,000, however, was in marked contrast to the coverage supplied by share capital for loans of the same size. This, plus a 90.2 per cent coverage for loans ranging from \$5,000 to \$9,999, contributed greatly to the larger deposit coverage.

Contract Period.—As previously stated, most of the term loans made by the Society had a relatively short maturity. A study of the loans made during the five-year period 1941-45 reveals that 57 per cent of the 114 loans, for which information on contract period was available, had been made for a period of less than six months. These were comparatively small loans, however, constituting 29.6 per cent of the total value of all 114 loans and averaging \$2,200 per loan. Only 11 loans had been made for a period exceeding two years. The maximum maturity was for one loan granted for a period of 5 years.

A study of Table 5 will show that, except for loans with a maturity of 3 months or less, there was a tendency for the average size loan to increase with

TABLE 6—PLANS OF REPAYMENT RELATED TO ACTUAL METHODS OF REPAYMENT OF LOANS, 1941-45

Plans of Repayment			Actual Methods of Repayment							
			Lump Sum		Instalment		Balloon		Current	
	Number	Amount	Number	Amount	Number	Amount	Number	Amount	Number	Amount
		\$000		\$000		\$000		\$000		\$000
Lump sum.	197	3,120	156	1,741	31	1,118	4	213	6	48
Instalment.	61	284	1	3	46	231	1	3	13	48
Balloon....	2	31					2	30		
Other.....	52	2,271	20	522	32	1,749				
No infor- mation..	10	35	4	5	5	6			1	25
Total....	322	5,741	181	2,271	114	3,104	7	246	20	121

a lengthening of the contract period. The rate of increase in the size of loans was particularly marked with loans made for a period of 12 or more months.

Plans of Repayment.—The “lump sum” plan of repayment was the most prevalent one (Table 6). Balloon payment contracts provide a compromise between single payment or lump sum, and instalment loans. They usually require regular but very small payments before maturity and a large final payment at maturity. Maturity dates may refer to a particular day of the year, or the end of a business or marketing period.

Some co-operative associations found it more convenient to keep an open account with the Society. This facilitated their management and helped to even out business fluctuations. A large volume of business was done under this system. Out of a total of \$5,740,629 advanced by the Society during the 1941-45 period, \$2,271,225 was advanced to associations with open accounts, as compared with \$3,119,512 to be repaid in a single payment, \$284,092 by instalments and only \$30,500 according to balloon-payment contracts.

Methods of Repayment.—A test of the degree of adherence to plans of repayment agreed to by both the Society and the borrowers can be obtained through a study of methods actually employed. It will be seen by Table 6 that although borrowers did, in some cases, deviate from the original plans, they, in most cases, had recourse to a plan which better facilitated the operations of the Society. For instance, of 197 “lump sum” loans, amounting to \$3,119,513, a total of 31, amounting to \$1,118,016, were paid in instalments. It would seem that this plan is very popular with borrowers. In many cases, it may not have been adopted as the original plan simply because, when applications for loans were made, borrowers were not in a position to forecast with accuracy the dates and amounts of their business returns. Although a variety of plans are adopted when contracts are made; in the last analysis, borrowers repay their loans almost entirely according to the “lump sum” and instalment plans.

Overdue Loans.—In order to test the seriousness of loans being held past their due date, loans made for a definite contract period were classified according to size, numbers and amounts unpaid at maturity and period overdue. Although loans falling in the \$5,000 to \$9,999 class were overdue more than any other size class, there was no marked relationship between size of loans and the proportion overdue. The overdue period was a little more than twice as long for the 25 loans granted for 3 months or less as for the 36 loans granted for 3 to 6 months. Only 2 of the 40 loans granted for longer periods were overdue. Many factors controllable or otherwise, may account for this situation. It might be surmised, however, that in most cases the tendency for loans to become overdue was not a serious problem and can be attributed, in part, to poor forecasting on the part of the borrowers. It is also possible in some cases, that management could have adopted a more liberal policy with respect to terms of repayment. This would have resulted in a lower proportion of delinquency and would have facilitated loan management by the Society.

Conclusion.—The Saskatchewan Co-operative Credit Society is a co-operative organization, authorized by the Saskatchewan Legislature to conduct a deposit and loan business with its members. It may be considered a central credit union, necessary to the development and integration of the credit union movement in the province but it also contributes to the furtherance and integration of the co-operative movement as a whole by providing co-operative trading organizations with credit for development and expansion purposes.

Credit unions and co-operative associations may deposit their surplus funds with the Society. This safe and remunerative depository for surplus funds, together with the provision of safety box or vault services, is especially valuable to those communities without banking facilities.

FACTORS INFLUENCING THE DRESSED WEIGHT OF HOGS**F. M. SCHRADER**

The average dressed weight of hogs marketed varies from year to year. In the autumn of 1941 the average dressed weight of hogs marketed in Canada was 155 pounds. In the autumn of 1942 it was 165 pounds. This factor of weight per carcass has an important bearing on the amount of pork and pork products produced in any year. Ten pounds per hog amounts to 60 million pounds of product for a slaughter of six million head, as in 1941. This quantity would provide one million Canadians with pork for a year.

Fundamentally, the factors that cause an increase or decrease in the number of hogs reaching market cause the variations in the average weight of carcasses. These factors are the quantity of grain available for feeding live stock and the relationship between hog and feed prices. However, these influences do not operate in exactly the same way.

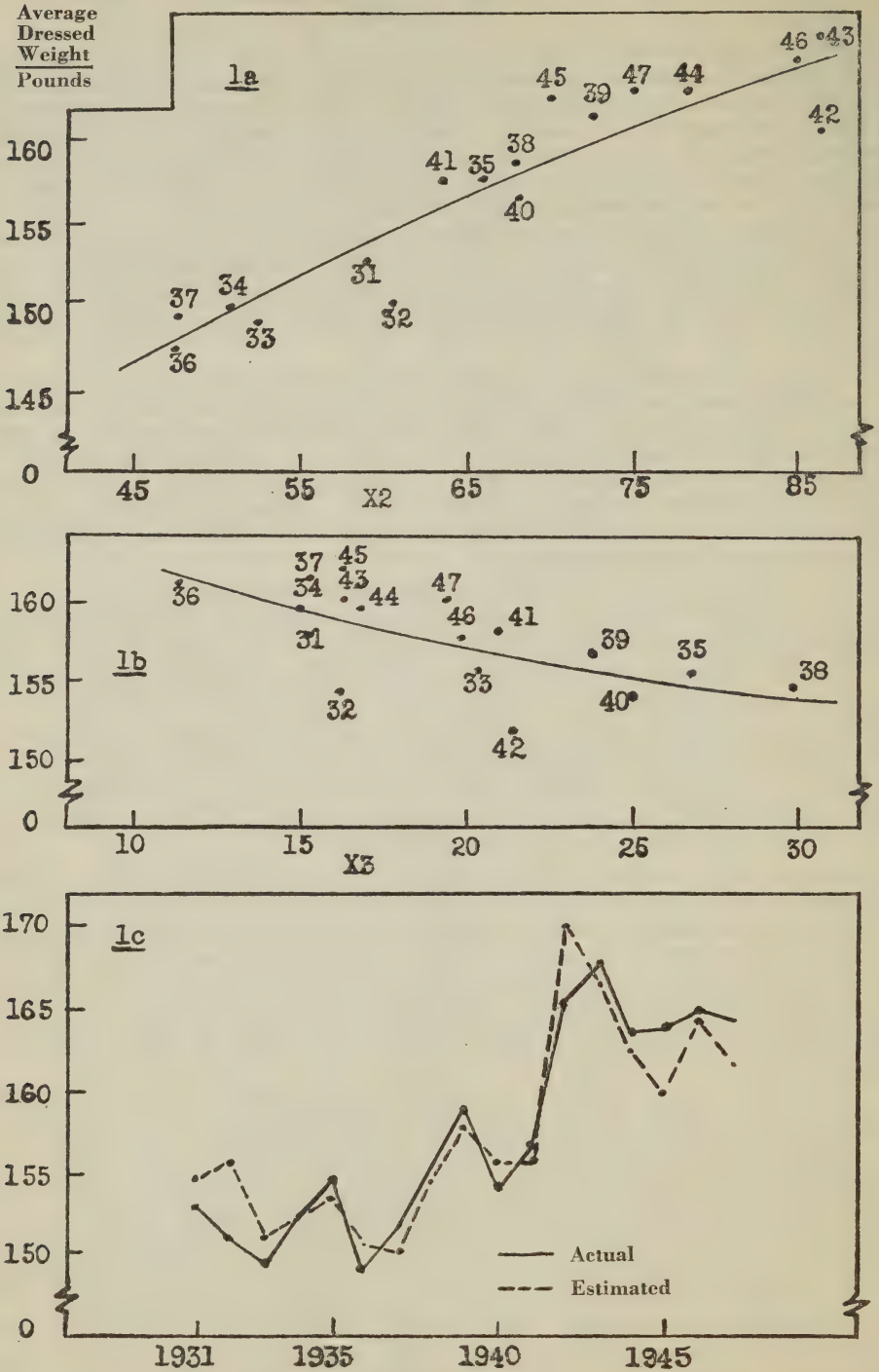
In their effort to maximize incomes, farmers tend to increase hog production when the feed supplies are plentiful and hog prices are high relative to feed grain prices. Hog production is reduced when the situation is reversed. Favourable conditions at the time breeding plans are made and carried out (November to January) result in an increase in the numbers of hogs available for marketing during the following autumn and winter. By midsummer, this number is established. But the weight at which these hogs will be marketed is influenced by the quantity of feed available.

Farmers respond to favourable conditions of feed supply in the current year by increased feeding of their hogs and marketing them at heavier weights. However, if hog prices relative to feed grain prices at market time are also favourable, farmers tend to restrict the heavy feeding of market hogs. This is done to reserve sufficient feed to support their new breeding program which is likely to be at least as extensive as the previous year's program. But if a good feed supply at market time is accompanied by an unfavourable price relationship, the new breeding program will not be expanded and there will be more feed available for the hogs being marketed currently. This situation is reversed when feed grain supplies are unfavourable.

An analysis was made of the average dressed weight of hogs marketed during the period September to December. During this period about one-half of the year's marketings occur. Variations in the average dressed weight were studied in relation to (a) the net supply of feed grain per grain consuming animal unit from the current harvest and (b) the average hog barley ratio for the period August to November of the same year. The analysis covered the seventeen-year period 1931 to 1947, the period for which a series of average dressed weight was available.

It was found that almost 80 per cent of the variations in average dressed weight were associated with variations in the feed supplies per grain consuming animal unit and the average hog barley ratio for August to November. An increase of one per cent in the feed grain supply was associated with a .24 per cent increase in the average September to December dressed weight or vice versa while, at the same time, an increase of one per cent in the August to November average hog barley ratio was associated with a .10 per cent decrease in the average dressed weight or vice versa. This relationship is shown in the first two sections of the chart. The last section shows the actual September to December average dressed weight for each year from 1931 to 1947 and the estimated average September to December dressed weight.

RELATION BETWEEN AVERAGE DRESSED WEIGHT OF HOG CARCASSES AND FEED GRAIN SUPPLIES AND AUTUMN HOG BARLEY RATIO.



Appendix

The relationship among factors considered in this analysis was

$$\log X_1 = \log a + b_2 \log X_2 + b_3 \log X_3$$

X_1 = average dressed weight of hog carcasses marketed during the four-month period september to December, pounds

X_2 = the net feed grain supply per grain consuming Animal Unit, hundredths of tons.

X_3 = the average hog barley ratio for the period August to November.

AVERAGE DRESSED WEIGHT OF HOGS, FEEDS SUPPLIES
AND HOG BARLEY RATIO

Year	X_1	X_2	X_3	Est. X_1	
					$a = 1.8778$
					$b_2 = +.2404$
					$b_3 = -.0965$
					$\bar{R}^2 = .7954$
					$\bar{R} = .8919$
					$B_{12.3} = 1.0196$
					$B_{13.2} = .4669$
					$\bar{S}_y = \pm .00918$
					$= 97.91\% \text{ to } 102.14\%$
1931.....	152.5	59.1	18.6	151.8	
1932.....	154.6	60.4	18.0	153.0	
1933.....	146.5	52.5	19.2	147.1	
1934.....	149.5	51.1	15.4	149.2	
1935.....	148.2	66.1	30.2	148.8	
1936.....	144.7	47.3	14.6	147.2	
1937.....	146.8	47.4	15.7	146.3	
1938.....	151.6	67.9	30.0	149.8	
1939.....	151.1	72.5	24.8	155.0	
1940.....	148.0	67.9	27.0	151.4	
1941.....	154.8	63.4	23.0	151.2	
1942.....	165.5	86.6	22.3	163.5	
1943.....	165.3	86.9	16.3	168.6	
1944.....	163.6	78.2	18.3	162.6	
1945.....	160.6	69.9	17.6	158.8	
1946.....	164.8	85.1	20.1	164.4	
1947.....	162.2	75.0	17.9	161.3	

79.54% of the variation in X_1 was associated with the variation in X_2 and X_3 . Although R^2 is not as large as may be desired it is considered to be satisfactory when the accurateness of the X_1 series is considered.

The relative size of the Betas represents the relative importance the independent variables (X_2 and X_3) would have in explaining the variation in the dependent variable (X_1), if they were acting alone.

There are two chances in three that any estimated value of X_1 will fall within the range of 1 standard error of estimate which is 97.9% to 102.1% of the true value of X_1 .

LAND TENURE IN SOUTHWESTERN ONTARIO

P. J. GILHOOLY AND J. A. DAWSON

A study of 130 farms in Essex and Kent counties in southwestern Ontario indicates that a large proportion of farmers in the area own their own farms. Over ninety per cent of those visited owned the buildings and the greater part of the land which they were farming. A small number of farmers rent complete farm units on shares or for cash. Whole farms are rented as units when the farmers lack the necessary capital to purchase land and a number of farmers who own their own farms rent additional land or rent land out to others. Land that was rented out was used mainly for special crops such as tobacco and tomatoes that require considerable hand labour.

Thirty-two share arrangements were in effect between fathers and sons and ten other arrangements between close relatives. Father-son business arrangements are used by farmers as an incentive to their sons to remain on the home farm by giving them a fixed share of the receipts in return for their labour. These arrangements are advantageous to the sons in that they give them an opportunity to start farming without capital. The sons are then in a position to acquire capital to buy the home farm from their fathers and, as is sometimes the case, at the time of final settlement of the father's estate they may have acquired sufficient capital to compensate any brothers or sisters or any other beneficiaries without having to mortgage the farm.

Share-Rental Agreements.—In only three cases were whole farms share-rented and there were eight share-rental agreements for parts of farms. Twenty-

one agreements provided for the growing of specific crops under agreement between the landlord and the tenant. The majority of the share agreements was verbal and for one year at a time.

Those covering whole farms have been in effect for the longest period of time. Two of them originally were written leases and have now expired but the agreements are still in effect on a verbal basis. In each case the landlord owned the land and buildings and was responsible for the payment of the taxes, the insurance on buildings and repairs to buildings and fences. The tenant was responsible for all other expenses. The division of receipts was for crops only; the landlord usually received two-fifths of the crop receipts and the tenant three-fifths. The tenant derived all the income from livestock.

Eight farmers rented parcels of land to work in conjunction with their own farms. Generally, in these cases, no buildings were rented nor was livestock kept on this land. The normal division of receipts again was two-fifths to the landlord and three-fifths to the tenant.

Land is rented for growing specific crops by agreement between the landlord and the tenant. For a corn crop the one-third—two-thirds landlord-tenant share was the most common. The landlord provided the land and the tenant worked the land, seeded and harvested the crop. In some cases the landlord paid part of the fertilizer expense. With crops such as tobacco and tomatoes the general practice was for the landlord to work the land and seed the crop and the tenant to provide all the hand labour involved in the care and harvesting of the crop. Expenses for seed and fertilizer were shared equally and cash receipts were divided equally. Share agreements for hay were the same as are found in most districts; the tenant takes off the hay and receives half the crop.

A notable feature of the share agreements was the lack of any provision, set out by the landlord, for maintenance of soil fertility. When the whole farm was rented and the tenant was living on the farm the need for such provisions was not of prime importance as the tenant, if it was his intention to remain on the farm for any period of time, would maintain the soil fertility in his own interests. With land rented in small parcels soil depletion could become a major factor but it was found that most of the tenants fitted the rented land in with the rotation on their own farms and in this way soil fertility was being maintained on a standard similar to that on owner operated farms. Land rented out for special crops such as corn, tobacco and tomatoes, is generally fitted in with the rotation on the landlord's farm.

Cash Rental.—This method of renting land does not seem to be a common practice in the area. Five farmers rented whole farms, seven rented parcels of land to work in conjunction with their own farms and four rented land for pasture on a cash basis. In cases where the whole farm was rented the tenant lived on the farm and had the use of all the buildings. The agreements were mainly verbal and it was provided that an agreement could be terminated at the end of the year on the notification of either party.

Father-Son Arrangements.—Three stages of development in the father-son arrangements were evident. In the first the fathers owned all the capital assets; in the second the fathers owned all the land and buildings and the sons owned part or all of the livestock and equipment; and in the third stage the fathers and the sons both owned land which they worked together.

In the first stage most arrangements provided that father and son each should contribute his own labour, but the intention of most of the fathers was to do less work and eventually permit the sons to operate the farms. Due to the shortage of labour and the desire of the fathers to have their sons remain on the farms, the fathers usually made quite generous arrangements with them. The most common business arrangement provided for the division of the cash receipts equally between father and son after all capital and operating expenses had been paid. Variations from this division occurred. In some cases the fathers

paid all the capital and operating expenses and the sons received from one-third to one-half the cash receipts in return for their labour. In other instances the sons received their living plus a fixed salary or a share of the receipts from some enterprise on the farm.

In the second stage the arrangements generally had been in effect for a longer period of time and the fathers took a less active part in the farm work. On these farms the fathers' contribution to labour ranged from doing half the work to not working at all while the sons worked full time. The sons, over a period of years, had acquired some capital and were now owners of part or all of the livestock and equipment while the fathers still retained ownership of the land and buildings. On these farms, for the most part, the fathers paid the taxes and insurance on buildings and were responsible for the upkeep of buildings and fences; expenses for seed and fertilizer were shared and each paid for repairs on the equipment that he owned. The cash crop receipts were shared equally and livestock receipts were shared according to the amount of livestock each owned. An interesting feature on some of these farms was the ownership by the sons of all the tractor equipment and by the fathers of all the horse equipment. This is an indication of the success of these arrangements in that the sons were putting their capital into machinery to improve the mechanization of the farms with the view to the time they would completely take over the farm and at the same time the fathers were receiving the benefits of this mechanization.

In the third stage the sons owned part of the land which they operated with their fathers. The arrangement on these farms was that the land owned by the father and the son was operated as one unit; all expenses were paid and net receipts were shared equally.

On some farms on which there was more than one son working at home, arrangements similar to those above were in effect, the father dividing the receipts equally with all the sons.

Partnership arrangements were also in effect between close relatives and the division of expenses and receipts followed the same lines as in the father-son arrangements.

THE RELATIONSHIP BETWEEN USE AND COSTS OF OPERATION OF FARM MACHINES

J. A. DAWSON AND P. J. GILHOOLY

The trend towards increased mechanization on Canadian farms in recent years has resulted in a great increase in the farmers' investment in machinery and equipment. On an annual basis this investment may be expressed as overhead charges. Such overhead charges include interest, depreciation, repairs and housing. The extent of these overhead charges in relation to the amount of work to be performed should be given careful consideration by a farmer before a major piece of equipment is purchased.

During the summer of 1947 farmers were visited in the counties of Essex and Kent in southwestern Ontario in order to study the production and marketing of grain corn. At the same time detailed information was gathered on the machines used in the growing and harvesting of this crop in order to determine the cost of owning and operating this machinery. Corn Planters, Row Cultivators, Corn Binders and Tractors are considered here.

An overhead charge was worked out for each machine that was purchased new. This was not done for those bought second-hand as the present owners did not know the original costs and it was impossible to determine the depreciation. The overhead charges for corn machines as calculated here include depreciation, interest and repairs, but not housing. A depreciation rate based on the average life of each type of machine was applied to the original cost to arrive at a charge for depreciation. The average life was calculated by adding the farmers' estimates of future life to the present ages of the machines. An interest rate of five per cent was charged on the amount of money tied-up in

TABLE 1.—CORN PLANTERS: RELATION OF USE TO OVERHEAD CHARGE

Days Used Per Head	Number of machines	Average days used	Overhead Charge	
			Per year	Per day used
			\$	\$
Under 4.....	19	2.7	9.67	3.64
4-6.....	21	4.4	9.03	2.06
6 and Over.....	27	9.1	12.25	1.35
Total and Averages.....	67	5.8	10.51	1.82

a machine assuming that this return could be realized if the investment had been made elsewhere. This rate was charged against one-half of the original cost on the assumption that, for a group of machines, the average present value would be close to this figure. The repairs were those given as normal over as long a period of the life of a machine as the farmer was able to recall.

Tractors were considered separately as certain other costs were involved. Depreciation and interest charges were obtained by the same method as used for the other machines while expenditures for fuel, oil and repairs were those given by the farmers for the year 1946.

The machines on these farms were purchased over a considerable number of years and, in general, the purchase price would be higher at the present time. The repairs would also be higher. For these reasons, it is apparent that the overhead charges shown here are not dependable as absolute figures but are of definite use in making comparisons between groups.

TABLE 2.—ROW CULTIVATORS: RELATION OF USE TO OVERHEAD CHARGE

Days used per year	Horse Drawn				Tractor drawn			
	Number of machines	Average days used	Overhead charge		Number of machines	Average days used	Overhead charge	
			Per year	Per day used			Per year	Per day used
			\$	\$			\$	\$
Under 9.....	12	6.3	8.05	1.27	23	9.7	18.04	1.85
9-15.....	9	10.8	7.31	0.68				
15-26.....					24	20.0	18.38	0.92
26 and over.....	13	23.1	7.53	0.33	26	39.6	16.71	0.42
Total and averages.....	34	13.9	7.65	0.55	73	23.7	17.68	0.74

In an attempt to determine the relationship between use and cost of operation of certain machines on corn farms the available records were grouped according to the number of days each of the machines was used. The relationship of use to overhead charges on the records for which complete information was available is shown in Tables 1, 2 and 3, for corn planters, row cultivators and corn binders, respectively. On the basis of the information supplied by the farmers included in the sample it would seem that there is little significant difference in the average overhead charges per year for each of these machines which is directly attributable to the amount of use. Since depreciation and interest charges are calculated on fixed rates, the cost of these items was dependent on the value of the machines and was not affected by use. While repairs in most cases increased somewhat with greater use they made up only about one-quarter of the overhead charge.

The importance of having sufficient work for a machine to allow for a reasonably low overhead cost per day is demonstrated in the accompanying tables. The average overhead charge per day for corn planters decreased from \$3.64

TABLE 3.—CORN BINDERS: RELATION OF USE TO OVERHEAD CHARGE

Days used per year	Number of machines	Average days used	Overhead charge	
			Per year	Per day used
Under 5.....	11	2.6	20.31	7.84
5 and over.....	9	12.1	24.28	2.01
Total and averages.....	20	6.9	22.10	3.21

for the group which was used less than 4 days per year to \$1.35 per day for those used 6 days or more. Similarly the overhead cost per day for row cultivators showed a decrease of \$.94 for horse drawn and \$1.43 for tractor drawn machines between the lowest and highest use groups. In the case of corn binders an even greater saving was indicated as a result of greater use.

The possibility of farmers making substantial savings through arranging for fuller use of machines is indicated by the variation in the number of days which all of the above types of machines, both new and second-hand, are used on individual farms. In the case of corn planters it was found that the number of days used ranged from 2 to 18, one machine being used 26 days. The average use of all planters was 5.4 days. Horse-drawn row cultivators averaged 13.7 days' use per year, the range being from 2 to 52 days. The range in the use of tractor cultivators was from 8 to 60 days, the average being 22.5 days. The use of corn binders varied from 1 to 26 days.

TABLE 4.—TRACTORS: RELATION OF USE TO OVERHEAD AND OPERATING EXPENSES

Days used per year	Number of machines	Average days used	Overhead and operating expenses				Total expense per day used
			Depreciation and interest	Repairs	Fuel and oil	Total	
			\$	\$	\$	\$	\$
Under 101.....	24	74.4	97.08	66.75	191.55	355.38	4.78
101-171.....	26	145.4	90.36	62.88	261.55	414.79	2.85
171 and over.....	24	196.5	99.29	81.71	334.25	515.25	2.62
Total and averages.....	74	138.9	95.44	70.24	262.43	428.11	3.08

In the case of tractors, operating expenses must be considered in addition to overhead charges. As was the case with the other machines studied, depreciation and interest charges on tractors do not vary greatly with use while some increase in repairs is indicated. Operating expenses, such as fuel and oil, however, are directly associated with use. As shown in Table 4 the total overhead and operating expenses on tractors averaged \$428. Of this amount 61 per cent was fuel and oil, 16 per cent repairs and 23 per cent depreciation and interest. The latter item should be an important consideration in the decision to purchase a tractor since it does not cease if the tractor remains idle.

The effect of the amount of work for which a tractor is required on a farm on the overhead and operating expenses per day is also shown in Table 4. The average expense per day decreased from \$4.78 for the group of tractors which was used less than 101 days per year to \$2.62 per day for the group which was used over 170 days. Considering the full sample of 118 tractors, in which is included those purchased second-hand as well as new, the number of days used ranged from 10 to 250, the average for the group being 125.8.

A great variation in the number of days used is evident for each of the above types of machines and a large number are used very few days each year. On farms where equipment is used very little charges per day are high. This

is a factor which may result in high production costs on these farms. Thus, if a farmer is thinking of buying a machine, he should consider as to whether he has sufficient work on which the machine can be used. In cases where the farm is too small to keep a machine fully employed one or more of the following possibilities should be considered:

- (1) Increasing the use by custom work,
- (2) Hiring the work done,
- (3) Joint ownership or use with one or more neighbours.

In the case of some machines these alternatives may not be popular or feasible and certain seasonal limitations may exist. A number of the farmers visited have found it advantageous to hire cultivating and other tractor work on a custom basis. Corn planters and binders were found to be adaptable to joint ownership or use. The wide variation in the use of these machines indicates that many farmers have not yet fully explored the above possibilities.

FAO—A PROGRESS REPORT¹

J. F. BOOTH

FAO is now an operating body—but it is not an organization to market food or engage in feeding people. Other bodies were formed for that purpose. FAO is dealing with the problems of backward undernourished people by helping them to help themselves. This means, first, research and education in both the techniques of production and in matters related to nutrition. The staff of FAO aided by the scientists and technicians of many countries is assisting the governments and people of the undeveloped countries. Improvements in production must be achieved by greater application of science, by better husbandry and by the extensive use of fertilizer and machinery. Production, once the emergency is past, must be shifted from cereals to protective food. Improvements in marketing, in food preservation, in grading and standardization must be brought about. Industries must be developed in rural and urban centres to employ surplus rural population and to raise the purchasing power of people. On occasions the provision of food from surplus producing nations on a concessional basis may be necessary, but the program is essentially one of self help with FAO providing leadership and co-ordination. Much of the program involves other international agencies and FAO will function as the initiating body in bringing such agencies into the picture.

For the more advanced countries FAO also has a program. It will differ to some extent from that already mentioned but few of such countries are not in need of help in one form or another. FAO will act as an information and world statistical service for agriculture, fisheries and forestry. It will help to advance the techniques of production and encourage modern methods of food processing and distribution. But of more importance, it will help to co-ordinate production and assist nations, if the need arises, to mobilize their forces to prevent over-production or to handle surpluses.

FAO in Operation.—FAO is an operating body with certain achievements to its credit. A year and a half ago it convened a meeting of nations to deal with emergency food problems and to that meeting presented the results of its own world food survey. Its action resulted in the creation of an International Emergency Food Council to take over and extend the function of the wartime Combined Food Board. From that action there developed a world wide program for the conservation of existing food supplies, for food allocation and for an expansion of production.

The Copenhagen Conference in September 1946 provided for a Preparatory Commission on World Food Board Proposals. The Commission, consisting of

¹ This is an extract from an address given at the United Empire Club, in Ottawa, January 14, 1948. For other articles on FAO see the following issues of the *Economic Annalist*, May and November 1947; February and November 1946; February 1945, and August 1943.

17 countries including Canada, met for three months last winter in Washington and among other things

- (1) Recommended Commodity Agreements to stabilize agricultural prices on international markets and drafted a set of basic principles to guide the formation and operation of such Agreements,
- (2) Recommended the establishment of a World Food Council to initiate and co-ordinate Commodity Agreements,
- (3) Suggested that Council arrange for an annual review of national food and agriculture programs with a view to co-ordination of production on an international basis.

At the call of FAO representatives of 27 European and American countries and five international organizations met in Czechoslovakia last spring to consider action that might be taken to conserve supplies of timber, allocate existing supplies and increase production in order that the acute housing and reconstruction program of Europe might be met. The Conference reached agreement on many matters and set up an organization to deal with both the emergency and longer run problems of the industry and of those it will serve.

In May 1947, FAO convened a Rice Study Group which met at Trivandrum, India, to appraise the rice situation and outlook in Asia and to determine possible ways of putting into effect the recommendations of the Preparatory Commission on World Food Proposals. The group estimated that barring a succession of abnormally good crops in all countries there would be a grave shortage of rice in Asia for another five years. The study group suggested alternative proposals for international action in dealing with rice and recommended a conference of representatives to follow up the preliminary work done by the study group.

Subsequently, at Geneva the FAO Conference advised that a meeting at governmental level be held as early as possible in South East Asia to consider the recommendations of the Rice Study Group with a view to their implementation.

In July 1947, FAO at the request of the International Emergency Food Council invited representatives of 40 countries to meet in Paris to consider the increasingly acute cereals situation which had resulted from poor harvests in Western Europe and elsewhere.

Special Missions.—The duties of FAO include the formation of Special Missions made up of international authorities and FAO technicians to study the agricultural or other problems of countries in need of assistance. At the request of the Government of Greece such a Mission was named in 1946 and proceeded to conduct a comprehensive study of the economy of that war-torn country. The Mission completed its study that fall and presented a comprehensive report, with recommendations, dealing with agricultural and industrial development, public administration, taxation and finance. The action of the United States Congress in voting several hundred million dollars for aid to Greece and Turkey should be considered in connection with this report.

A second Mission was named last spring to make a survey of Poland. It has completed its field work and a report is expected soon. Applications for Missions have also been received from Siam, Hungary and Venezuela and action has been initiated on certain of these.

In February 1947, FAO took over certain unexpired functions of UNRRA in respect of agricultural advisory services.

Work of FAO Divisions.—In addition to these special functions, FAO has during these past two years made rapid progress toward the completion of its administrative services. Divisions of Agriculture, Economics, Marketing and Statistics, Fisheries, Forestry and Forest Products, Nutrition, Rural Welfare, and Information have been created and staffed. These Divisions have been extremely active in developing a wide range of fact finding and advisory services. The second annual report of the Director-General lists 66 important fields of action already developed by FAO divisions.

REVIEW OF LITERATURE

Family Farm Policy. Report of the Proceedings of the Conference on Family Farm Policy, February 1946, edited by Joseph Ackerman and Marshall Harris. Chicago, The University of Chicago Press. 1947, pp. xxii + 518.

Most farm people agree that the family farm should stay. But what is a family farm? What does it imply? How big should it be? These are some of the questions that the conference on Family Farm Policy, held in Chicago during the week of February 15 to 20, 1946, attempted to answer. The conference was attended by participants from the British Commonwealth, Northern Europe, Central Europe, Latin America, and the United States.

The proceedings of this conference were published in a book and dedicated to the Family Farmers of the World. The book is divided into seven parts and has 20 chapters.

In Chapter I, entitled "Interpretive Summary of the Conference", an effort is made to define the term "family farm". And it was agreed "that there can be no family farm unless the entrepreneurial function resides in the farm family". This was considered the first and most essential characteristic.

What is also significant is the following statement in the first chapter. "The impression should not be left that an acceptance of a national policy of establishing family farms means that conditions of tenure are satisfactory on all farms that meet the family farm definition. Far from it. The family farm is not an end in agricultural policy. Rather, it is an instrument, a means, through which agriculture and rural life can be made a richer and more satisfying experience for those who farm. It is a strong institution in the rural economy for the attainment of desirable objectives."

Part VI is the most important section from the policy aspect. It is entitled the "Committee Reports" and deals with: The Place of the Family Farm in Our Land Tenure Policy; The Place of Ownership and Tenancy in a Tenure System Based on Family Farms; Measures to Improve Tenure Conditions on Family Farms; Action to Improve the Conditions of Farm Laborers and Sharecroppers; and, Responsibility of Government in Tenure Improvement.

In the final chapter, written by H. C. Taylor, there is emphasis on "the importance of the family farm as a means to an end—an institution through which to build a higher type of rural civilization.

The chapter on "Policies and Experiences Relating to Farm Land Tenure in Canada" is written by Dr. J. F. Booth, Head of the Economics Division, Marketing Service, Dominion Department of Agriculture. Dr. Booth deals with land tenure policies, with current conditions and the future. He points out that "under policies adopted, ownership of land and the establishment of family farms were encouraged; that over the years ownership has given place to tenancy on a substantial proportion of farms; that the family farm principle of operation applies on rented farms as well as others; and the term 'family farm' includes different kinds and sizes of farms." He also points out that, "We need much more information on land policies and tenure experiences in different parts of Canada and on the income-producing capacity and social conditions prevailing under different forms of tenure and in different parts of the nation. The research necessary to this end must begin with the operation of farms and carry through to the government policy level."

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The ECONOMIC ANNALIST

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THE ECONOMIC SITUATION

Canadian expenditures for capital goods in 1948 are now estimated at approximately three billion dollars, which is 25 per cent higher than that for last year. This is a preliminary figure following a review of the forecasts made at the beginning of the year by the Dominion Department of Reconstruction and Supply.

Of the 25 per cent increase over 1947 now expected, some 15 per cent will be in construction costs and in the price of machinery and equipment, while the remaining 10 per cent will represent an increase in the physical volume of investment.

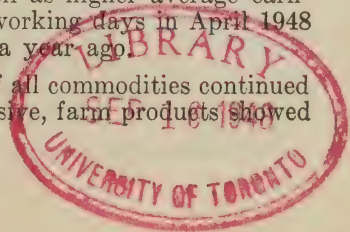
This program of private and public investment outlay is the largest in Canada's history, and comprises an expenditure of \$1.7 billion on new construction, and \$1.3 billion for the purchase of machinery and equipment. As compared with the figures of 1947, expenditure on construction will be 28 per cent higher while that on machinery and equipment will be up 21 per cent. The commercial, merchandising and service group leads with an increase of 18 per cent, followed by utilities with an advance of 11 per cent, and manufacturing, which will be 7 per cent higher. Smaller increases are anticipated by the primary industries and by the construction industry, amounting to 4 per cent, while that for housing and direct government will be 3 per cent higher in each case, and the expenditure on institutions will be up 2 per cent.

Employment and Earnings.—There was a contraction in the volume of employment afforded by leading establishments in the major industrial divisions at May 1, 1948, when the loss was the fifth in as many months. The Dominion Bureau of Statistics reports pointed out that unusually pronounced declines of a seasonal nature were recorded in logging, and there were slight reductions in manufacturing, as well as in trade. There was greater activity in mining, transportation, communications, construction and maintenance, hotels and restaurants and laundries and dry cleaning establishments. The falling off in trade and manufacturing were contra-seasonal, as was the increase in mining.

In reviewing the past 12 months between May 1, 1947 and May, 1948 there was an increase of 14.5 per cent in the index of weekly salaries and wages for the eight leading industries as compared with a rise of 3.5 per cent in the index of employment.

The monthly estimate for April 1948 of Canadian labour income was \$540 million, an increase of \$7 million over the previous month's total and \$65 million higher than the April 1947 total. According to the D.B.S., higher levels of weekly earnings were responsible for the increase from March 1948. The increase from April 1947 reflects increased employment as well as higher average earnings. Time lost through labour disputes was 49,000 working days in April 1948 as compared with 366,000 days for the same month a year ago.

Prices.—The index numbers of wholesale prices of all commodities continued to rise. Between December 1947 and May 1948 inclusive, farm products showed the greatest percentage increase.



ANNUAL AND MONTHLY INDEX NUMBERS
WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year	Wholesale Prices 1935-39=100			Farm Prices of Agricultural Products 1935-39=100	Commodities and Services used by Farmers(a) 1935-39=100		Cost of Living 1935-39=100	
	Farm Products (b)	Field Products (c)	Animal Products (d)		Equip- ment and Materials (f)	Com- posite Index (g)	Farm Living Costs(a) (h)	Urban Living Costs (i)
1913.....							80.1	79.1
1914.....							82.3	79.7
1915.....							86.5	80.7
1916.....							93.7	87.0
1917.....							111.5	102.4
1918.....							131.1	115.6
1919.....							143.0	126.5
1920.....							171.3	145.4
1921.....							139.9	129.9
1922.....					124.6	131.7	127.9	120.4
1923.....					118.3	129.6	128.3	120.7
1924.....					122.3	129.3	125.5	118.8
1925.....					123.2	128.6	123.9	119.8
1926.....	144.4	158.5	130.2		119.9	126.8	121.1	121.8
1927.....	138.6	149.4	127.8		119.9	126.7	119.8	119.9
1928.....	136.3	134.3	138.2		118.3	125.0	118.5	120.5
1929.....	140.8	137.2	144.4		117.6	123.7	117.3	121.7
1930.....	119.5	105.8	133.3		105.6	115.7	113.7	120.8
1931.....	78.9	65.0	92.7		92.2	102.1	103.9	109.1
1932.....	65.5	60.4	70.5		89.3	95.1	97.8	99.0
1933.....	69.3	69.3	69.2		88.8	92.2	95.8	94.4
1934.....	83.5	80.5	86.5		96.8	96.5	97.9	95.6
1935.....	89.2	84.4	94.1	88.0	95.6	96.4	97.9	96.2
1936.....	97.9	102.2	93.7	96.9	98.7	98.2	98.3	98.1
1937.....	117.4	128.9	106.0	119.7	108.4	104.3	102.9	101.2
1938.....	102.9	100.9	104.8	105.0	101.2	101.8	101.9	102.2
1939.....	92.6	83.7	101.5	91.8	95.7	99.4	99.5	101.5
1940.....	96.1	85.4	106.7	96.8	101.7	107.5	108.5	105.6
1941.....	106.6	88.9	124.4	110.2	107.8	115.2	114.0	111.7
1942.....	127.1	109.7	144.6	133.1	119.1	126.5	119.0	117.0
1943.....	145.4	129.0	161.8	157.8	122.3	134.7	121.6	118.4
1944.....	155.3	144.5	166.1	172.3	126.0	137.9	122.8	118.9
1945.....	162.8	155.4	170.2	180.7	125.9	140.6	123.2	119.5
1946.....	171.0	160.9	181.2	192.4	128.0	145.0	127.1	123.6
1947.....	183.5	166.8	200.2	203.6	139.5	(j) 156.9	138.3	135.5
1947								
Apr.....	177.4	157.4	197.3	197.6	140.1	(j) 157.1	136.1	130.6
May.....	180.3	162.2	198.4	199.8				133.1
June.....	181.7	163.6	199.8	203.1				134.9
July.....	184.2	170.8	197.5	203.2				135.9
Aug.....	185.0	170.1	199.8	205.0	146.3	(j) 165.6	146.5	136.6
Sept.....	188.1	170.3	205.9	208.1				139.4
Oct.....	187.5	172.1	202.9	208.2				142.2
Nov.....	192.8	181.2	204.4	211.9				143.6
Dec.....	200.1	184.0	216.1	217.9				146.0
1948								
Jan.....	212.3	185.7	238.8	231.7	169.8	(j) 174.7	155.3	148.3
Feb.....	210.1	181.8	238.4	231.4				150.1
Mar.....	211.0	181.1	240.9	231.2				150.8
Apr.....	215.7	185.9	245.5	233.7	172.9	(j) 183.2	163.7	151.6
May.....	222.0	192.9	251.2	238.8				153.3
June.....	232.7	200.4	265.1	248.6				154.3

(a) Revised July, 1948 by The Dominion Bureau of Statistics.

(b) Canada. Dominion Bureau of Statistics, Prices Branch. *Prices and Price Indexes*. (Mimeo). Ottawa. Monthly. Wholesale prices of products of Canadian farms.

(c) Ibid (b). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid (b). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agricultural Division. *Index Numbers of Farm Prices of Agricultural Products*. (Mimeo). Ottawa. Monthly.(f) Canada. Dominion Bureau of Statistics, Prices Branch. *Price Index Numbers of Commodities and Services Used by Farmers*. (Mimeo). Ottawa. Jan., Apr. and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) Ibid (f).

(i) Ibid (b).

(j) Preliminary, subject to revision.

Some commodities were still subject to price control. As of August 1, 1948, the following goods were under control: sugar, molasses, the more important canned fruits and vegetables, canned citrus juices, citrus fruits, grapes, fresh cabbage, carrots, imported and new potatoes, butter and wheat.

Cost of Living.—Higher living costs reflect higher prices. The Dominion Bureau of Statistics cost-of-living index, on the base 1935-39=100, advanced from 154.3 for June 1 to 156.9 for July 2, almost all of this rise resulting from higher food prices. At the second of July last year the index stood at 135.9. From August, 1939, to July 2 this year the cost of living index has advanced 55.7 per cent.

The food index moved up from 193.9 on June 1 to 201.3 due mainly to further advances in meats, potatoes and eggs. Other changes in group indexes were of lesser proportions. Clothing advanced from 174.8 to 175.4. Scattered advances in coal and coke changed fuel and light from 124.3 to 124.5 and home furnishings and services moved up fractionally from 162.0 to 162.8.

The special excise taxes in effect since November 1947 as part of the exchange conservation program ceased to apply after midnight, Saturday, July 31st.

Farm Prices and Income.—The index number of prices received by Canadian farmers from the sale of agricultural products during May 1948 is the highest recorded—239.3 (1935-39=100). On the other hand, farm costs were also rising. May 1948 wage rates for farm workers in Canada were the highest recorded since the inception of the D.B.S. farm wage survey in 1940. The average monthly wage rate with board for all Canada was \$83.26 (at May 15, 1948), as compared with \$77.01 a year ago. For the period starting with August 1947 to April 1948, the index number of farm prices received increased by slightly more than 14 per cent. Prices of goods and services used by farmers and farm living costs during the same period increased by 10 per cent and almost 12 per cent respectively.

Cash income from the sale of farm products for the first three months of 1948, according to a preliminary estimate by the Dominion Bureau of Statistics, amounted to \$403.3 million. This amount compares with cash returns from the sale of farm products of \$297.7 million and \$339.8 million during the corresponding periods of 1946 and 1947 respectively. Supplementary cash payments by the Dominion Government raise the 1948 first quarter total to \$418.1 million.

Foreign Trade.—Total domestic exports (excluding gold) for the six-month period in 1948 amounted to \$1.4 billion, well above last year's exports for the comparable period. Value of exports to British countries was down, but to the United States was up by about \$163 million (Jan.-June 1948, \$648.9 million; January-June, 1947, \$485.0 million).

Total imports for the first six months of 1948 were valued at \$1.3 billion, slightly above last year's comparable total. Value of imports from the United Kingdom were well above the 1947 five-month total. Imports from the United States were down (Jan.-June, 1948, \$886.5 million; Jan.-June, 1947, \$981.7 million).

The combination of increased exports and decreased imports has eased the United States dollar situation for Canada.

Canada is to provide 19.5 per cent of the products authorized for purchase by the Economic Co-operation Administration (ECA) on behalf of countries participating in the European Recovery Program. Figures released on June 26 by the Economic Co-operation Administrator, indicated that procurement authorizations for European countries, Trieste and China totalled \$730,783,993, of which commodities valued at \$142,492,011 were being sought from Canada. Countries to which such authorizations had been granted are Austria, Denmark, France, the British and American Zones of Germany, the Netherlands, Norway and the United Kingdom.

POULTRY PRODUCTION IN NOVA SCOTIA

G. C. RETSON

Significant changes have taken place in the Nova Scotia poultry industry during recent years. A rapid expansion in production has been accompanied by new developments in breeding, flock management and marketing. To assist the Provincial Department of Agriculture in securing more detailed information on these recent developments a poultry study is being carried on in the Province by the Economics Division, Marketing Service, Dominion Department of Agriculture.

Records have been secured from 111 poultrymen covering their overall farm business for the period October 1, 1946 to September 30, 1947. While tabulation of these records has not yet been completed, a preliminary analysis has been made of the data on the poultry enterprises conducted on these farms.

Description of Poultry Enterprises.—Poultry flocks included in the study were located at scattered points throughout the Province, with the heaviest concentration in the Annapolis Valley. They ranged from mixed farm flocks, housing around 100 layers, to specialized poultry farms keeping an average of approximately 3,000 layers for the year. The average number of layers for all farms in the study was 495. In addition to their laying flock, 47 of the farmers raised flocks of cockerels.

Seventy-nine of the 111 farms kept cross-bred birds, the most common variety being combinations of the Rhode Island or New Hampshire Red and Light Sussex breeds. With the exception of two White Leghorn flocks the balance were straight heavy-type breeds. Nine of the farms had approved flocks and sold hatching eggs. None of the poultrymen operated commercial hatcheries.

Investment in poultry buildings and equipment averaged \$1,992 per farm, or \$2.67 per layer housed in the Fall. Average inventory investment in poultry flock was \$1,278 per farm.

TABLE 1.—SUMMARY OF POULTRY BUSINESS ON 111 FARMS IN NOVA SCOTIA, 1946-47

	Average per Farm
	\$
Receipts:—	
Bird sales.....	1,326
Egg sales.....	2,948
Home use.....	81
Net inventory increase poultry flock.....	138
Total receipts.....	4,493
Expenses:—	
Birds purchased.....	395
Feed.....	2,386
General expenses.....	75
Use of buildings and equipment.....	252
Interest on investment in poultry.....	51
Total expenses.....	3,159
Poultry labour returns.....	1,334
Labour (1).....	631
Net poultry returns.....	703

(1) Time spent on the poultry enterprise was charged at an estimated average cost of 40 cents per hour.

Poultry Enterprise Business Summary.—Table 1 presents a summary of the poultry business of the farms in the study. A number of individual items has been grouped together in the expense section of the summary. "Use of buildings and equipment", for example, includes such charges as depreciation, interest, share of taxes and insurance, use of car, truck or tractor. "Poultry labour returns", which averaged \$1,334 per farm, represents the return for all

labour engaged in the poultry industry, including that of the operator, members of the family and hired workers. The estimated value of all such labour was deducted from poultry labour returns to secure net poultry returns which averaged \$703 per farm.

Effect of Management on Returns.—Net poultry returns varied widely from farm to farm, ranging from an average of \$4,172 for the ten highest flocks to minus \$776 for the ten lowest. As such variations are mainly the result of differences in management, an analysis was made of various factors of poultry management and their influence on returns.

Rate of Production.—The factor of management most commonly associated with poultry returns is rate of production. In the study, rate of production was measured by "per cent lay".

It will be noted in Table 2 that as per cent lay increased there was a corresponding increase in net poultry returns and labour returns per hour. This relationship was even more pronounced when a further breakdown was made of flocks of similar size. Most of the layers in the study were kept for a period of less than 12 months, it being a common practice to dispose of all mature birds in the late spring or early summer. This, combined with the fact that very few of the poultrymen kept over yearling hens, contributed to the relatively high average rate of production.

TABLE 2.—RELATION OF PER CENT LAY TO RETURNS—111 POULTRY FLOCKS 1946-47

Per cent Lay		Flocks	Layers	Net Poultry Returns	Labour Returns per Hour
Range	Average				
%	%	No.	No.	\$	\$
Less than 49.....	43.6	34	465	243	0.55
49-57.....	52.9	39	528	830	0.87
More than 57.....	61.5	38	488	985	1.14
Total or average.....	53.2	111	495	703	0.85

Efficiency in the Use of Labour.—Efficiency in the use of labour was measured by time taken per day to care for 100 mature birds.

As minutes of labour per 100 birds increased, there was a decline in net poultry returns and in returns per hour. Poultrymen taking more than one hour of labour per 100 birds per day had average labour returns of 35 cents per hour, but when labour was charged at a rate of 40 cents per hour net poultry returns for this group was minus \$73.

Generally speaking, poultry enterprises making most efficient use of labour had relatively large flocks and large pens with convenient arrangements for doing chores. The 31 poultrymen who were able to look after their flocks in less than 30 minutes per 100 birds per day had larger pens and housed over twice as many birds per pen as the group who spent an hour per 100 birds. They made greater use of such labour saving devices as running water, com-

TABLE 3.—RELATION OF MINUTES OF LABOUR PER 100 BIRDS PER DAY TO VARIOUS FACTORS—111 POULTRY FLOCKS 1946-47

Labour per 100 Birds per Day		Flocks	Layers	Per cent Lay	Net Poultry Returns	Labour Returns per Hour
Range	Average					
Minutes	Minutes	No.	No.	%	\$	\$
Less than 30.....	22	31	764	54.8	2,072	1.80
30-60.....	42	53	461	52.4	298	0.58
More than 60.....	82	27	253	50.2	73	0.35
Total or average...	40	111	495	53.2	703	0.85

munity nests, dropping pits and deep litter. Although they spent less time per 100 birds they were able to secure above average per cent lay.

The 27 poultrymen, who took nearly four times as long to look after 100 birds as the most efficient group, had to contend with a number of factors which consumed time and effort. One fairly common one was the housing of the flock in a number of small buildings scattered about the yard. In other cases poultry houses were divided into small and unhandy pens which greatly increased chore time. While these and other inconvenient arrangements did not individually appear to be particularly serious, their combined effect meant many additional miles of walking and hours of labour during the year.

TABLE 4.—RELATION OF NUMBER OF LAYERS TO VARIOUS FACTORS—111 POULTRY FLOCKS 1946-47

Layers		Flocks	Per cent Lay	Daily Labour per 100 Birds	Net Poultry Returns	Poultry Labour Returns per Hour
Range	Average					
No.	No.	No.	%	Minutes	\$	\$
Less than 250.....	154	39	55.4	67	85	0.49
250-500.....	369	37	53.0	44	391	0.70
More than 500.....	994	35	52.8	32	1,728	1.08
Total or average...	495	111	53.2	40	703	0.85

Size of Business.—Size of business was measured by number of layers kept during the year. As its calculation takes into account such factors as sales, mortality and additions to flock, it will be noted that "number of layers" represents the average size of flock for the year and is thus considerably less than the number of layers housed in the fall.

As number of layers increased there was a marked increase in returns. While there was a tendency for per cent lay to fall off with increased size of business, this was offset by increased efficiency in use of labour. The business year covered in the study was a favourable one for poultrymen, with feed prices at a low level in relation to egg and poultry prices. For this reason, size of business exerted a strong influence on returns.

Cumulative Effect of Management Factors.—Of the various factors of management analyzed, rate of production measured by per cent lay, efficiency in use of labour measured by daily labour per 100 birds, and size of business measured by number of layers, exerted the strongest influence on poultry returns. While each of these factors exerted a strong influence, it was their combined effect which in the main determined the relative success of each poultry business.

Table 5 indicates the cumulative influence on returns of above average rating in these factors. It will be noted that as the number of factors above average increased, there was a substantial increase in poultry returns. The 15 poultrymen having all three factors above average received a relatively low price per dozen for their eggs but were able to secure net poultry returns more than three times as large as the average for the study.

Other Factors.—Space does not permit presentation of data on the influence of a number of other phases of poultry management. Other factors analyzed did not, however, appear to exert a particularly strong influence on returns. While such factors as mortality, investment in buildings and equipment, and rate of turnover affect the success of a business, their influence on returns in the study appeared to be of relatively minor importance when compared to that of rate of production, efficiency in use of labour and size of business.

Trends in Poultry Management.—Comparison of current data with those available for earlier years indicate that a number of changes have taken place in the influence of, or the relative emphasis placed on various phases of poultry management. These changes indicate a relatively strong upward trend in efficiency of management.

One development which is of considerable significance is the substantial decline in mortality rates during recent years. This decline which is attributed in part to the extensive use of cross-bred birds and the vigorous disease control program carried on in the province is reflected in the relatively low average mortality rates for the study (laying flocks 11 per cent—range flocks 14 per cent) and explains to some extent the relatively minor influence of mortality on returns.

While poultrymen do not discount the effect of such factors as mortality and investment in buildings and equipment, there appears to be a considerable change in the emphasis placed on these factors. This is especially noticeable in current poultry house construction policy. The labour consuming practice of housing birds in small scattered pens as a disease control measure is no longer favoured. The once popular recommendation that investment in buildings and equipment be kept to "as little as you can get by with" is now followed with considerable reservation. Additional expenses for such items as insulation, ventilation and labour saving devices, it is generally agreed, are more than covered by increased returns.

Reports on the egg laying contests conducted at Nappan, N.S. from 1919 to 1935 indicate an upward trend in average rate of production, ranging from a low of 122 eggs per bird in 1919 to a high of 203 eggs or 55.6 per cent lay in 1935. While it is probable that there has been some levelling off in the rapid increase in rate of production it would appear from the study that an upward trend is still being maintained. One phase of this trend is the substantial increase in egg production during the fall months.

TABLE 5.—RELATION OF NUMBER OF FACTORS ABOVE AVERAGE TO VARIOUS FACTORS—
111 POULTRY FLOCKS, 1946-47

Number of Factors Above Average	Flocks	Factors			Average Price per dozen Eggs	Net Poultry Returns	Poultry Labour Returns per Hour
		Layers	Per Cent Lay	Daily Labour Per 100 Birds			
	No.	No.	%	Min.	¢	\$	\$
None.....	30	246	46.2	68	37.8	—58	0.35
One.....	39	322	52.9	50	37.1	311	0.63
Two.....	27	769	51.3	37	38.7	1,192	0.94
Three.....	15	950	60.0	20	36.3	2,364	1.72
Total or average.....	111	495	53.2	40	37.6	703	0.85

Upward trends in efficiency in use of labour and size of flock have been particularly noticeable during the past ten years. Output of saleable chicks by Nova Scotia approved hatcheries increased from 231,447 in 1937 to 2,106,289 in 1947. Practically all of the poultrymen in the study have increased their flock size in recent years. In spite of general concern over the future of the poultry business in late 1947 about 20 per cent of them planned a further increase the following year. Rapidly rising labour costs during recent years have had a strong influence in the development of improved utilization of labour. The wide variation in efficiency in use of labour on farms included in the study gives some idea of the extent of these developments.

While important developments have taken place in rate of production, efficiency in use of labour, and size of business in recent years, there appears to be wide variation in the relative emphasis placed on these factors. Rate of production has been and still is recognized as fundamental to success in the poultry business. In view of the relationships indicated in the study, it is rather questionable however, if size of business and efficiency in the use of labour are receiving attention commensurate with their influence on poultry returns.

CO-OPERATIVE ASSOCIATIONS AMONG FRENCH-SPEAKING GROUPS IN ONTARIO

RENÉ FORTIER

During the summer of 1947, the Economics Division of the Dominion Department of Agriculture in co-operation with the Co-operation and Markets Branch of the Ontario Department of Agriculture conducted a survey of all known co-operatives in the Province of Ontario. As part of this survey, 41 associations established among French-speaking groups in Eastern and Northern Ontario were visited.

This article summarizes the information obtained from these associations. Records were obtained from 27 marketing and farm supply associations, 12 cheese factories, one co-operative service association and one central association engaged mainly in the distribution of farm supplies at wholesale. These co-operatives were located in the counties of Russell and Prescott and in the city of Ottawa in Eastern Ontario, and in the counties of Cochrane, Nipissing, Sudbury and Timiskaming in Northern Ontario. Total membership was 3,094 and total business transacted during the year under review was over two million dollars.

Co-operatives Marketing Farm Products and Distributing Farm Supplies.

—Out of the 27 associations visited, 16 distributed farm supplies, six marketed farm products and five were retail stores. They were all incorporated under Part XII of the Ontario Companies Act. Three associations were incorporated during the period 1919 to 1939, six were incorporated between 1940 and 1943 and 18 between 1944 and 1947. From this distribution of years of incorporation it is quite evident that co-operative marketing and co-operative distribution of farm supplies is of fairly recent origin among French-speaking groups in Ontario.

Requirements for membership in these associations vary greatly. Each member must be accepted by the Board of Directors, but only six associations require a formal application from prospective members. In 15 associations members are required to sign a contract. This contract stipulates that each member must do business through the co-operative in all present and future activities undertaken in accordance with the terms of the charter and by-laws. It may extend from one to five years but, in most cases, it runs for a period of five years. In seven associations admission is limited by the by-laws strictly to members of the parish and to farmers and producers in 14 associations. Before being admitted as members in nine associations, applicants must join the *Union des Cultivateurs Franco-Ontariens*.

The total sales for 25 of these associations amounted to \$1,712,691 during 1946-47. An analysis of this volume of business is shown in Table 1.

TABLE 1.—SALES OF FARM PRODUCTS AND FARM SUPPLIES BY 25 ASSOCIATIONS AMONG FRENCH-SPEAKING GROUPS IN EASTERN AND NORTHERN ONTARIO

	Value of Sales
	\$
Marketing of farm products:—	
Live stock.....	186,460
Eggs and poultry products.....	182,490
Dairy products.....	178,519
Fibre flax.....	120,259
Total.....	667,728
Distribution of farm supplies:—	
Feed and fertilizer.....	680,371
Food products.....	315,614
Clothing.....	3,286
Other general farm supplies.....	45,692
Total.....	1,044,963
Total.....	1,712,691

Some associations marketed produce as well as handled supplies. Some marketed more than one product and handled more than one of the supplies listed.

Out of the 2,816 members and shareholders, 2,128 were reported as active. Non-members numbered 2,217. Business done with those members and shareholders amounted to 72 per cent of the total sales.

All but one of these co-operative associations are financed through subscriptions to share capital and loan units. The single exception uses membership fees only. One interesting feature consists in the provision of a note by the member for \$75 along with the initial payment of one \$25 loan unit payable in cash. This method of financing is used by twelve associations.

Out of the six associations incorporated on share capital basis, one was organized in 1931, one in 1946 and three in 1942. In general the newer co-operatives are organized on a loan unit basis. Ninety-four per cent of the fully-paid shares and 94 per cent of the loan units were paid in cash by members. The difference was retained from patronage dividends.

Twenty-three associations reported having borrowed money from the various sources indicated in Table 2. Some of these associations made use of more than one source.

TABLE 2.—SOURCES AND AMOUNTS OF MONEY BORROWED BY 23 ASSOCIATIONS REPORTING

Sources	Associa- tions	Amount Out- standing	Total Borrowed	Amount Repaid
	No.	\$	\$	\$
Bank.....	9	31,828	62,000	30,172
Credit Union.....	11	27,422	45,422	18,000
Ontario Government.....	1	1,900	1,900	—
Private.....	16	72,170	75,255	3,085
Other.....	2	2,100	2,100	—
Total.....	39	135,410	186,667	51,257

The average amount borrowed during the year was \$8,116. Private loans amounted to 40.3 per cent of the total loans and loans from banks and credit unions exceeded loans from private sources by \$32,167. Forty-nine per cent of the bank loans and 40 per cent of the credit union loans were repaid during the year. Only a small amount of the private loans was paid back. The rate of interest ranged from three to seven per cent, the average rate being five per cent.

Sixteen of the associations provided their balance sheets for use in the survey and these have been consolidated in Table 3. This consolidated balance sheet includes six associations marketing farm products, six distributing farm supplies and four operating store businesses.

Financial ratios provide some criterion of the financial soundness of these associations. The ratio of current assets to current liabilities was 1.6 to 1. A ratio of 2 to 1 is usually considered as standard and therefore it would appear that the degree of liquidity among these 16 associations is not sufficiently high to permit prompt payment of current bills or to make new or large purchases. The ratio of members' equity to fixed assets which is 1 to 1 is below the general accepted standard of 1.5 to 1. The members apparently do not own an adequate share of the enterprise because they are dependent on outside sources for their working capital and their investments barely cover fixed assets. In other words, the total members' equity shown in Table 3 as \$275,893 is approximately equal to the value of the plant (fixed assets) less allowance for depreciation which is shown as \$275,062.

Audit.—Auditing of the books was done by practising accountants in ten associations, by members' committees in five associations and by the manager, a public notary and school teachers in four associations out of the 19 reporting. Audit was done at the end of the fiscal year in 15 associations, two or three times a year in two associations and once a month in four other associations. Six associations gave no report of the time of the auditing of their books.

TABLE 3.—CONSOLIDATED BALANCE SHEET OF 16 Co-OPERATIVE ASSOCIATIONS

Assets		Liabilities	
	\$		\$
Cash on hand, in bank or credit union....	52,299	Bank and credit union loans.....	56,744
Receivables less bad debts.....	45,409	Accounts payable.....	62,618
		Accrued expenses.....	2,061
		Other current liabilities.....	2,964
Merchandise on hand.....	103,033	Total current liabilities.....	124,387
		Mortgages and other deferred liabilities.....	84,247
Other current assets.....	5,040	Total liabilities to the public.....	208,634
Total current assets.....	205,781	Loans from members.....	113,860
		Surplus allocated to members.....	6,868
		Liabilities to members.....	120,728
Plant, less depreciation.....	275,062	Share capital and membership fees....	26,028
Investment in wholesale or other central.....	330	Reserve not allocated to members....	11,613
		Undivided surplus.....	117,524
Other assets.....	3,354	Net worth.....	155,165
Total assets.....	484,527	Members' equity.....	275,893
		Total liabilities and members' equity..	484,527

Directors.—The number of directors varies from five to nine. In all cases, to be eligible for election as a director, one must be an active member or hold at least one share. Their term of office is one year in eight associations, three years in eighteen associations and unlimited in one association. Only three associations pay a directors' fee for attendance at meetings.

Special committees exist in seven associations and three of them have more than one committee. They include both members and directors and are organized to assist the Board of Directors or to take charge of special projects, such as finance and education.

Staff and Management.—The staff of the 27 associations consisted of 148 employees of whom 87 were permanent and the remainder were hired on a part-time basis. Only 17 of this total were bonded in 13 associations. Five of the managers were over 50 years old and the others were between 25 and 50 years of age. Most managers had primary school training and in a few cases college training. Four had co-operative training at college or by correspondence courses.

Fifteen managers reported business experience prior to becoming managers of a co-operative and the remainder came from a farm or directly from schools. Two managers were not paid for their services and four were paid on a commission basis. Two managers received a yearly salary under \$400; three managers received between \$600 and \$1,199 a year, nine between \$1,200 and 1,799, four between \$1,800 and \$2,399 and three over \$2,400.

Policies.—Prices and markup were determined by managers in 17 associations. Credit policy and engagement of staff were determined by directors in most of the associations.

The credit policy of the co-operative associations in their own trading with suppliers was on a cash basis. The associations also took advantage of the

short term credit generally granted. The credit policy towards members was very different. Cash trading was the rule in seven associations and credit was allowed in 18 associations. Credit was in some cases granted for an unlimited amount for one to three months, or for a limited amount for a specified period of time, and in each particular case the amount and time were left to the judgment of the manager.

Membership Relations.—Meetings of members were held once a year in 19 associations and twice a year or more often in the others. Fifty to seventy-five per cent of the members attended the meetings. Very few associations had special features at their annual meetings or organized special gatherings of people during the year.

Twelve associations distributed an annual report, two associations published a news sheet, six used circular letters, and one supplied market information. Five associations used the local press for advertising, and many of them intend to use radio for similar purpose. Co-operative publications were received by 1,595 members. These members subscribed to *La Terre Ontarienne*, the monthly review of the U.C.F.O., *La Terre de Chez-Nous* and *Ensemble*.

Membership is encouraged from non-members by means of the U.C.F.O. clubs or by managers' and directors' contacts at the co-operative. Regarding inter-co-operative relations it may be noted that ten associations were affiliated with the central association; and 15 associations were members of credit unions.

Cheese factories.—Twelve cheese factories were visited during the survey. They were all located in the counties of Russell and Prescott, except one which was in the county of Nipissing in Northern Ontario. Nine of them were incorporated under Part XII of the Ontario Companies Act; the others were farmer owned and controlled on a joint stock basis. Five associations were financed through loan units with a \$25 loan unit paid in cash and a \$75 note from each member. A five-year contract is required by six associations and one association uses a ten year contract. The requirements of these contracts are similar to those used by the marketing and farm supply co-operatives.

Money borrowed was mainly from private sources and from banks and credit unions and amounted to \$41,292 for eight associations.

Total business for 1946-47 for ten of these cheese factories amounted to \$408,278.00. Members—all considered active—numbered 269; non members numbered 139. Nearly 80 per cent of the cheese sold represented member business.

Co-operative service.—Only one co-operative service was operating in the area surveyed. It was a waterworks service, incorporated in 1915 with share capital, and is the sole survivor of a number of similar associations formed about that time. The others have all subsequently been absorbed by local municipal services. This association served nine shareholders of a small rural community. There was no charge for the service. All repairs and maintenance were done by the shareholders themselves or paid for by them individually.

The Central Co-operative.—*La Co-operative de Casselman* with headquarters in Ottawa was incorporated on October 22, 1946 and commenced operations on January 1, 1947. Since February 23, 1948 its name has been changed to *Co-operative Centrale Ottawa*. It acts as a central co-operative for 12 local co-operative associations and is itself an affiliate of the United Farmers Co-operative Co. of Toronto. Affiliated members may obtain from this association some of the products used on the farm and other supplies through a mail order service. Marketing of farm products is now under consideration.

In the *Centrale* the by-laws stipulate that each association must be approved by the Board of Directors before becoming an affiliated member. Admission fee is \$1. A three year contract must be signed which provides for payments by members of one-tenth of one per cent of their total sales, as at December 31, up to an amount representing 50 loan units of \$10 each (\$500) with a minimum

payment of three loan units (\$30) during first year. The total amount to be paid, i.e. \$500, must be covered by a note and this note is renewable annually. Payment of three loan units entitles unincorporated farmers' clubs to the services of the *Centrale*.

Loan units do not bear interest except in the case of loans made by individual farmers or loans made by member associations in excess of the amount agreed upon in their contract with the *Centrale* in which case interest is paid at a rate of 4 per cent. All business must be carried on through the *Centrale* and a bookkeeping system approved and recommended by them must be adopted.

Study Groups.—Some associations deal primarily with the study of co-operative principles, legislation and organization, and also are concerned with the furtherance of co-operative ideals and the dissemination of information to their own members, member associations and the public at large. Among these are the clubs for co-operative studies incorporated without share capital, under the Ontario Companies Act and *L'Union des Cultivateurs Franco Ontariens (U.C.F.O.)* which is the French-speaking equivalent of the Ontario Federation of Agriculture.

The *U.C.F.O.* is an agricultural producers association. Among other things, it assists co-operative associations with such problems as bookkeeping and administration. It also takes a leading part in the organization of farmers' clubs. Since its formation in 1929, 58 local farmers' clubs have been established in various parishes in Eastern and Northern Ontario. These local clubs study various problems relating to agriculture and co-operation. Discussion meetings are usually held in conjunction with the monthly meetings. Some clubs also buy certain types of supplies and merchandise, and sell farm products on a co-operative basis. This does not entail a large volume of business and is carried on mainly to obtain experience in the field of co-operative buying and selling, prior to the establishment of a co-operative association.

Sales are made strictly for cash and any surplus is distributed to members on a pro-rata basis. Buying is done only on a farmer's request. Any member who has paid his annual fee (\$3) is entitled to these services without any additional charge. On June 1, 1947, 14 of the 58 clubs mentioned above were engaged in this type of business.

Some of the more recent developments deserve special mention. The *Cercle d'Etudes de St. Jerome* at Kirkland Lake, incorporated on April 13, 1946 and the *Association d'Orientation Populaire de Timmins* incorporated on August 18, 1947 were organized as clubs for co-operative studies. They serve the cities in which they are located as well as the neighbouring districts. They supply their individual members and affiliated co-operative associations with information and advice pertaining to publicity, legislation, organization and administration of co-operatives. An admission fee of \$10 is required for membership in *L'Association d'Orientation de Timmins*. The operations of these clubs are financed by private loans from members and money obtained from the credit unions to which they belong. Their expenses are defrayed through the renting of office and store facilities to co-operative associations.

In November 1947, a meeting of all French-speaking groups in Ontario who were interested in co-operative development, was held in the city of North Bay. This meeting led to the foundation of a *Conseil Ontarien de la Cooperation* (Ontario Council of Co-operation) and the formulation of policies intended to promote the rapid expansion of clubs for co-operative studies.

Conclusion.—From this brief review it can be seen that the co-operative movement among French-speaking groups in Ontario while still comparatively young, even now shows real signs of vigour. It has made ample use of the experience accumulated by similar organizations in other parts of the province as well as in other provinces in Canada and is endeavouring to adopt methods and policies suitable to the communities it desires to serve.

THE CHARTER FOR AN INTERNATIONAL TRADE ORGANIZATION AND THE GENERAL AGREEMENT ON TARIFFS AND TRADE¹

A. E. RICHARDS²

The idea of mutual aid and a continuing organization among free nations for the betterment of world-wide economic relations had its beginning early in World War II. In the Agreement on Mutual Aid which was signed at Washington 23 February, 1942, by the United Kingdom and the United States, the nature and purpose of mutual aid arrangements were carefully defined. The most important part of this agreement from the post-war point of view is Article VII which lays down economic objectives of wider co-operation and higher standards of living in the countries concerned. Article VII of the 1942 agreement reads in part as follows:

. . . They (the terms of the Agreement) shall include provision for agreed action by the United States of America and the United Kingdom, open to participation by all other countries of like mind, directed to the expansion, by appropriate international and domestic measures, of production, employment, and the exchange and consumption of goods, which are the material foundations of the liberty and welfare of all peoples; to the elimination of all forms of discriminatory treatment in international commerce, and to the reduction of tariffs and other trade barriers; and, in general, to the attainment of all the economic objectives set forth in the Joint Declaration made on the 14th August, 1941 (the Atlantic Charter) by the President of the United States of America and the Prime Minister of the United Kingdom.

The mutual aid agreement between Canada and the United Kingdom dated 11 February, 1944, and the agreement between Canada and the USSR signed at Ottawa on the same day contained a similar declaration regarding post-war economic co-operation.

In accordance with the intention stated in Article VII of the Agreement on Mutual Aid, conversations took place between representatives of the United States Government and the Government of the United Kingdom in 1943 and 1944 which laid the ground work for a joint statement made on 6 December, 1945, regarding the understanding reached on commercial policy. Canada participated in these discussions.

On the same day, 6 December, 1945, the United States published and transmitted to other governments a document entitled *Proposals for Expansion of World Trade and Employment*. These proposals put forward the idea that there should be established an International Trade Organization of the United Nations, the members of which would agree to conduct their commercial relations in accordance with rules to be set forth in the Charter of the Organization.

Preparatory Committee Established.—In February, 1946, the Economic and Social Council of the United Nations, at its first meeting, adopted a resolution calling for an international conference on trade and employment to consider the creation of an International Trade Organization (ITO). It also established a Preparatory Committee of the 18 countries on the Economic and Social Council to arrange for the conference and prepare a draft Charter for such an organization.

London Meeting.—The First Session of the Committee convened in Church House, London, on 15 October, 1946, and concluded its meetings five weeks later on 26 November. It should be emphasized that this was a "Preparatory Committee" whose task was to prepare an agenda for a world conference on trade and employment using as a basic document the draft Charter for an International Trade Organization submitted by the delegation of the United States.

¹ Succeeding articles will deal with more specific sections of the Charter and General Agreement.

² Attended Geneva meetings and Havana Conference as adviser on Canadian delegation.

Notifications of the convening of the Preparatory Committee had been sent by the Secretary-General of the Economic and Social Council to the 18 members of the Council at that time. The members attending were Australia, Belgium-Luxembourg, Brazil, Canada, Chile, China, Cuba, Czechoslovakia, France, India, Lebanon, Netherlands, New Zealand, Norway, Union of South Africa, United States and the United Kingdom. The Union of Soviet Socialist Republics did not send a representative to the London meeting. The explanation given by Russia was that it had not at that time found it possible to devote sufficient preliminary study to the serious and far-reaching questions which were the subject of the committee's discussions. Representatives of countries, members of the United Nations, attending as observers were Colombia, Denmark, Poland, Peru, Mexico and Syria. Other observer representatives were the following inter-governmental organizations, the Food and Agriculture Organization, International Bank, International Labour Office and International Monetary Fund. Representatives of non-governmental organizations present as observers included the International Chamber of Commerce, International Co-operative Alliance, World Federation of Trade Unions and American Federation of Labour.

At the end of five weeks' intensive work by delegations representing 17 countries, a draft Charter was produced which is referred to as the "London Draft". It was decided at the London meeting that the draft, which was still in the nature of a working document, should undergo further editing by a Drafting Committee which was instructed to meet in New York in January 1947. It was agreed that a Second Session of the Preparatory Committee should take place in Geneva beginning on 8 April, 1947. Before the London meeting adjourned it was also decided that the Geneva agenda should include provision for multilateral negotiations between the members of the Preparatory Committee directed towards the reduction of tariffs and the elimination of preferences.

New York Meeting.—The Drafting Committee met at Lake Success, New York, as scheduled on 20 January, 1947, and 25 February, 1947, its report was completed. This report is known as the "New York Draft" and was used as a basis for discussion at the Geneva meetings.

Geneva Meeting.—On 10th April, 1947, in Geneva the 17 countries, still acting as a preparatory committee and with Russia still absent, had two tasks before them. The first was to reconcile divergent views among participating countries and endeavour to produce a firm draft of a Charter for an International Trade Organization for presentation at a world conference. The other task was the negotiation among countries assembled of a multilateral trade agreement.

Attending the Geneva meeting were two specialized agencies of the United Nations, the Food and Agriculture Organization and the International Labour Organization, and two other inter-governmental organizations, the International Bank of Reconstruction and Development and the International Monetary Fund. These Organizations were actively associated with all the proceedings. Non-members of the Preparatory Committee but members of the United Nations which sent representatives to Geneva were Colombia, Denmark, Mexico, Peru, Poland, Syria, Afghanistan, Argentina, Ecuador, Egypt, Greece, Iran, Saudi-Arabia, Siam, Sweden, Turkey, Uruguay, Venezuela and Yugoslavia. A number of non-governmental organizations sent observers who from time to time gave the Committee the benefit of their views. The Organizations were the American Federation of Labor, International Chamber of Commerce, International Co-operative Alliance, World Federation of Trade Unions and the International Federation of Agricultural Producers.

On 16 November, 1947, when the Second Session of the Preparatory Committee was concluded the two objectives had been accomplished. The draft of a Charter for an International Trade Organization had been produced to pass forward to the world conference on trade and employment at Havana and a General Agreement on Tariffs and Trade had been negotiated.

GENERAL AGREEMENT ON TARIFFS AND TRADE

The countries which were represented on the Preparatory Committee realized that considerable time would elapse before a Charter acceptable to a large number of countries could be produced. They believed that the task of the World Conference would be facilitated if concrete action were taken by the principal trading nations to enter into reciprocal negotiations directed to the substantial reduction of tariffs and to the elimination of preferences on a mutually advantageous basis.

The Preparatory Committee countries, which included the United States and the United Kingdom, were contributors to over 70 per cent of world trade. These countries felt that if they could demonstrate to the world that they really meant business and were not engaged simply in formulating high sounding phrases it would have an important influence on the confidence which smaller nations had in the Organization. The General Agreement would be a test of the sincerity of purpose of countries which had subscribed in general terms to the removal of trade barriers and expanding world economy.

From the middle of May to November negotiations directed towards the reduction of tariffs were carried out daily by the 17 countries. At the end of five months of negotiations 20 schedules of tariff concessions had been produced involving over 45,000 items. For each of these 45,000 or more different tariff items the rate of duty had been lowered or bound by agreement against increase. The Canadian schedule included over 1,000 items for which the duty was lowered or the existing rate bound against increase. On approximately 94 items Canadian tariff preferences with Commonwealth countries were eliminated by reducing the most-favoured-nation rate to the British Preference rate.

Two principles were adhered to throughout tariff negotiations. First, there would be no increase in existing rates of duty, and secondly any reduction in duty made by a single country would be extended on equal terms or what is known as the most-favoured-nation principle to all member countries which participated in the negotiations at Geneva.

The General Agreement consists of three parts: Part I contains; (a) an article providing for General Most-Favoured-Nation treatment among the contracting parties, (b) the schedule of tariff concessions which were negotiated by the participating countries; Part II contains rules of conduct in international trade. These are undertakings regarding commercial policy and are drawn largely from the Commercial Policy chapter of the draft Charter. Many of the provisions are standard clauses in trade treaties which are required for the purpose of safeguarding tariff concessions by prohibiting indirect forms of protection; Part III establishes the administrative machinery required for the operation of the General Agreement.

Protocol of Provisional Application.—The member countries which carried out the tariff negotiations at Geneva decided that the results of their work should be made effective at the earliest possible date. Some of the countries had executive authority from their governments to accept the agreement on a provisional basis; subject to later ratification by Parliament. Other countries were required by their constitutions to take legislative action before they could apply the General Agreement even provisionally. Accordingly it was agreed to adopt a protocol of provisional application which would provide for the adoption of the agreement on a provisional basis by some countries in the immediate future and by others at a later date in order to allow time for the necessary legislative action. The Protocol states that signatory countries agree to apply provisionally on and after January 1, 1948: (a) Parts I (schedule of concessions) and III (administration and procedure) of the General Agreement on Tariffs and Trade and (b) Part II of that Agreement to the fullest extent not inconsistent with existing legislation.

On 15 November, 1947, the Protocol was signed by Australia, Belgium, Canada, France, Luxembourg, the Netherlands, the United Kingdom and the United States. Accordingly since 1 January, 1948, the tariff reductions negotiated among these countries at Geneva have been in effect.

One clause of the Protocol states that it would remain open for signature until 30 June, 1948, on behalf of any government signatory to the Final Act adopted at the conclusion of the Geneva meetings.

The Geneva Final Act.—The Final Act adopted at the conclusion of the Geneva meetings on 30 October, 1947, was signed by 23 countries. As stated previously Russia did not participate. Discussions were held by 17 Members in London, New York and Geneva. During the Geneva meetings Burma, Ceylon and Southern Rhodesia, although under the sovereignty of Great Britain, realized full autonomy in the conduct of their external commercial relations. While negotiations were proceeding Pakistan was granted independent status through the partition of India and the countries making up the customs unions of Belgium-Luxembourg and Syria-Lebanon signed separately and in their own right.

In signing the Geneva Final Act the countries said in effect that negotiations directed to the substantial reductions of tariffs and other trade barriers and to the elimination of preferences on a reciprocal and mutually advantageous basis had terminated that day. They affirmed that the negotiations had resulted in the framing of a General Agreement on Tariffs and Trade and of a Protocol of a Provisional Application and that the texts of these documents were authentic. The signing of the Geneva Final Act also carried with it the obligation that signatories would submit the agreement and the Protocol to their respective Governments for consideration.

By the dead-line date 30 June, 1948, 22 out of 23 signatories of the Geneva Final Act had signed the Protocol of Provisional Application which extended the application of the terms of the Agreement and tariff concessions to nations accounting for approximately 80 per cent of world trade. Due to legislative difficulties Chile was unable to sign by June 20th and has asked that an extension of time be granted.

The next step in procedure is the ratification of the General Agreement by the Governments of the contracting parties. Due to the importance of the United States in world trade, governments of other member countries will not likely ratify the Agreement until dealt with by Congress. It is expected that the United States may give consideration to the question in the summer or fall of 1949. In the meantime the Agreement is applicable on a provisional basis.

Relation to the Charter.—Although closely related to the Charter and in fact containing twenty or more Articles on commercial policy and related trade matters which were lifted directly out of the Geneva Draft Charter, the General Agreement is a separate document with independent status.

If the Havana Charter for an International Trade Organization should not be ratified and become operative the General Agreement on Tariffs and Trade can remain an instrument under which countries can co-operate in their trade relations. Countries outside the present membership of twenty-two can join the "Club" if they qualify by making concessions in tariffs and if they eliminate other trade restrictions on a scale comparable to the present membership. Admittance is by a two-thirds majority of the members.

Present Status.—The First Session of the contracting parties of the General Agreement was held in Havana during the month of March, 1948, on which the head of the Canadian delegation served as Chairman. The Second Session of the contracting parties is to convene in Geneva on 16 August, 1948, where amendments may be submitted and the question of relation to the Charter will be under consideration.

THE HAVANA CHARTER

The ITO Charter is a lengthy document of some 30,000 words contained in 106 Articles and divided into 9 Chapters. It deals with broad principles of full and productive employment, economic development and reconstruction and in more specific terms, with matters of commercial policy, restrictive business practices and inter-governmental commodity agreements.

An important principle which is embodied throughout the Charter provisions is that of consultation with other members before action is taken in the international field of commerce and trade which might injure or prejudice the position of another member.

Up to the time of the convening of the United Nations Conference on Trade and Employment in Havana on 21 November, 1947, the work on the Charter for an International Trade Organization had been of a preparatory nature.

The results of the work of the Preparatory Committee had been documented in the London draft, the New York draft and the Geneva draft. The Geneva draft was used as a basis for discussion in the World Conference at Havana where 56 countries were represented, all of which very actively participated in the discussions. On 24 March, 1948, 53 countries signed the Final Act of the Havana Conference which authenticated the Havana Charter for an International Trade Organization. Russia did not attend and of the countries that participated in the Conference Argentina, Poland and Turkey did not sign the Havana Final Act.

The significance of the Havana Conference Final Act is that its signatories thereby state that; (1) they participated in the work of the Conference; (2) the text of the Charter annexed to the Final Act is authentic; and (3) they agree to present the Charter to their respective governments for consideration. The Charter can enter into force when twenty governments represented at Havana have deposited their instruments of acceptance.

The first meeting of the Interim Commission of ITO was held in Havana 20 March, 1948. At that meeting the Executive Committee of 18 members was elected. The members are: Australia, Brazil, Benelux, Canada, China, Colombia, Czechoslovakia, Egypt, El Salvador, France, Greece, India, Italy, Mexico, Norway, Philippines, United Kingdom, United States.

The Executive Committee of the Interim Commission held its First Session in Havana immediately after its establishment. It elected as Chairman Hon. L. D. Wilgress, head of the Canadian delegation. The Second Session of the Executive Committee is scheduled to open in Geneva August 26, 1948.

SPECIALTY CROPS IN THE IRRIGATED AREAS OF ALBERTA¹

A. J. PYRCH

In the fall of 1946, the Economics Division, Dominion Department of Agriculture, undertook to survey the production and marketing of specialty crops in the irrigated areas of Alberta. The objectives of the survey were to (1) ascertain the trends to specialty crop production in recent years, (2) determine the present extent of production and (3) ascertain present capacity and extent of markets for these products; and thus determine whether present production should be contracted, maintained or possibly expanded. Information collected covered the periods 1938 and 1942-1945 for production, and only the latter period for distribution.

Trends to Specialty Crop Production.—Specialty crop production has shown a marked expansion (Table 1). In 1945, specialty crops accounted for 20 per cent of the irrigated crop acreage. This was an increase of 11 per cent over the acreage devoted to these crops in 1938. Although only 20 per cent of the irrigated crop acreage of 338,262 acres was in specialty crops in 1945, it yielded 47 per cent of the total crop revenue. Sugar beets comprised the bulk

(¹) Areas included in the study are: Brooks I.D.; Canada Land and I.D.; Lethbridge Northern I.D.; Alberta Railway and I.D.; Taber I.D.; Raymond I.D.; and Magrath I.D.

TABLE 1.—COMPARISON OF ACREAGES IN SPECIALTY CROPS, ALBERTA, 1938 AND 1945

—	1938	1945	Increase 1945 over 1938	
	ac.	ac.	ac.	%
Canning Crops.....	973	6,252	5,279	542
Fresh Vegetables.....	1,869	6,702	4,833	259
Specialty Seed.....	3,795	24,223	20,428	538
Sugar Beets.....	19,977	29,522	9,545	48
Total.....	26,614	66,699	40,085	150

of this acreage, with specialty seed (peas, alfalfa, clover and garden) fresh and canning vegetables accounting for the balance.

PRODUCTION AND MARKETS

Canning Crops.—Peas, corn, beans and pumpkin were the main vegetables grown as canning crops, although some carrots and beets were also grown (Table 1).

Shipments of canned produce moving out of the area of production in 1942 totalled 85,922 cwt. In 1945, of the 222,306 cwt. of canning vegetable produce shipped out of the area, 73 per cent was destined for points within the Prairie Provinces. Distribution of the remaining 27 per cent was seven per cent to Ontario, ten per cent to Quebec, four per cent to British Columbia, five per cent to United States and one per cent to Nova Scotia.

The five per cent moving into the United States in 1945 consisted entirely of canned pumpkin. This was the first year in which canned goods of any description moved across the line from the Prairie Provinces. This market was the result of a shortage of pumpkins in the United States that year. It should not be relied upon to provide a steady outlet for canned produce from the irrigated area, as local supplies in the United States are usually adequate to meet the demand created in these areas in normal years.

Fresh Vegetables.—Total fresh vegetable production increased from 3,894 tons in 1938 to 15,509 tons in 1945. Of the 4,833-acre increase effected in the last 8 years, 86 per cent resulted from the expansion in potato acreage. Potatoes comprised 73 per cent of the entire fresh vegetable acreage in 1945, with the remaining 27 per cent primarily in turnips, cucumbers, carrots and corn.

Shipments out of the area totalled 3,877 tons in 1942 and 7,605 tons in 1945. These were confined almost entirely to the West, with Alberta and the adjoining provinces taking 96 per cent of the total volume exported in 1942, and 90 per cent in 1945. This produce, because of its bulk and perishability, requires the use of special cars, and considerable costs are incurred in handling. Markets for these commodities are, therefore, limited to adjacent provinces.

Specialty Seeds.—The demand for specialty seeds of all kinds has been strong in recent years. As a result of this increased demand acreages increased nearly six-fold between 1938 and 1945. Peas and alfalfa totalled 86 per cent of this acreage, each having more than 10,000 acres of land. Clover and some garden seeds, particularly radish, occupied the remaining acreage.

In 1945 specialty seed shipments amounted to 8,383,611 pounds. This exceeded the quantity shipped out of the area in 1942 by 3,112,468 pounds. Unlike other specialty products, markets for seeds exist beyond the boundaries of the adjoining provinces. Sixty-four per cent of the total volume of pea and garden seed exported was marketed east of Manitoba. On the other hand alfalfa and clover seed markets were confined to the western provinces. Manitoba interests took 85 per cent of total marketings, while the remaining 15 per cent was destined for points within the province of Alberta.

Sugar Beets.—The area contracted for sugar beet production in 1938 totalled 19,977 acres. From this acreage, 252,749 tons of beets were harvested, and 78,958,000 pounds of sugar were produced. Since then there has been a steady expansion in production. In 1945 from 29,522 acres, 362,611 tons of beets were harvested, and 99,864,000 pounds of sugar produced.

Markets for beet sugar are confined almost entirely to the Prairie Provinces. In 1942, 97 per cent of Alberta beet sugar was marketed there, and in 1945, 95 per cent. In the latter year, British Columbia absorbed one-half of one per cent of total shipments. This was probably marketed in the Northern Block, which has no direct rail connection with the West Coast where cane sugar refineries are located. The remaining four per cent was marketed through the Head of the Lakes. This market arose out of a wartime shortage of the commodity.

FUTURE POTENTIALITIES

Canning Crops.—Basing consumption on an eleven-year average, 1935-1945, and assuming that these per capita consumption figures are applicable to the western provinces, a total of 56,083,100 pounds of canned vegetable produce is utilized in the Prairie Provinces. Of this total, 53 per cent consists of canned vegetables, and 47 per cent of canned tomatoes.

Total production of canning crops within the Prairie Provinces in 1945 approximated 28,391,000 pounds, of which 87.5 per cent came from the irrigated areas of Alberta. This is equal to about one-half the consumption of canning crops, the other half being made up of tomatoes which are brought in from outside the Prairie Provinces. Therefore, under existing conditions which exclude possibilities for tomato production because of the lack of a suitable western canning variety, and assuming no change in western requirements in the years to come, only a modest increase may be expected in production, as output in Alberta and Manitoba already amounts to 96 per cent of the canned vegetables consumed in the Prairie Provinces.

Fresh Vegetables.—The steady increase in fresh vegetable supplies moving into civilian consumption resulted from increased production to meet wartime requirements and increased demand. Per capita consumption increased. With consumer demands remaining steady and irrigation farmers realizing the need of intensive crops for success in irrigation farming, the irrigated areas of Alberta may be expected to maintain the increased production of fresh vegetable produce.

It has also been suggested that market outlets may be expanded by: (1) grading and standardization in packing; (2) close producer and distributor relations. Such action should encourage wholesalers to handle more of the local produce, and also expand market outlets beyond the Prairies.

Specialty Seed.—Demand for specialty seeds of all types remains steady. Peas continue in strong demand both for consumption and seed. The United Kingdom and other North European countries provide a steady market for alfalfa and alsike clover seed. Sweet clover seed exports, while dependent primarily on United States markets, have found strong demand in the United Kingdom up to the present time. The demand for garden seeds is also greater than the supply. With the continuance of favourable market conditions, acreages devoted to these crops in the irrigated areas could be maintained.

However, the suitability of such crops for the area may affect their future. Peas are a relatively safe crop, yielding good returns and adding fertility to the soil. They are, therefore, likely to maintain, or possibly exceed, present acreage in these irrigated areas. Garden seeds, particularly radish, have also done exceptionally well on such land. Small legume seeds, such as alfalfa and the clovers, however, involve considerable risk in seed setting; thus making these crops hazardous for the irrigated areas where costs of irrigating have to be met annually. It is quite possible, therefore, that these acreages may in time be

diverted to legume hay production, which would serve the same purpose in the rotation, yet eliminate the production risks. Production of such seeds is better adapted to the grey wooded soils, where costs of land are much lower and returns do not have to be as high.

Sugar Beets.—The average annual consumption of sugar in Manitoba, Saskatchewan and Alberta for 1935-1939 has been estimated at 227,942,000 pounds. This includes sugar specialities, such as icing, brown, and cube sugar, as well as that amount used in the manufacture of food products.

Total production in the Prairie Provinces amounted to 118,191,000 pounds, or slightly more than one-half of the total consumption. Under existing conditions, it is estimated that there will be a 30 per cent increase in output in the next few years. This proposed increase is based on the fact that sugar consumption during the war, because of rationing, went down considerably. This is shown in the 1941-45 average per capita consumption which dropped by 12·2 pounds from the 1935-39 figure of 94·7 pounds per person.

CONCLUSIONS

Production of "specialty crops" has increased in the irrigation districts. Demand has also expanded. With the exception of specialty seed, markets for this produce were confined largely to the Prairie Provinces. It is unlikely that any significant amount of this produce will be marketed in Eastern Canada in the post-war years.

In irrigation farming, it is not essential that the entire acreage be devoted to these "high acre unit value" crops. The essential role of specialty crops on irrigated lands is to offset the additional cost of farming incurred through irrigating. Once this is done, the remaining acreage may be put to less intensive crops.

SOME ASPECTS OF THE LIFE INSURANCE EXPERIENCE OF SASKATCHEWAN FARMERS¹

GORDON HAASE

For many persons, the purchase of life insurance represents the most important business transaction they will make in their lifetime.² In the case of farmers, however, the purchase of life insurance may have a reduced importance.

1. Farmers build up their estates in terms of land, improvements and machinery. The value of this estate is then available for the eventual needs of their dependents, and the need of insurance for this purpose is reduced or eliminated.

2. Any savings which farmers make are generally plowed back into the farm business, where their productivity is ordinarily higher than the interest earned on savings in insurance. In addition, most farmers are not entirely free of debt, and it would be costly to accumulate savings in insurance at say 3 per cent, and have borrowings at the same time costing say 6 per cent.

(1) A paper presented to the Combined Seminar, College of Agriculture, University of Saskatchewan, Saskatoon, on March 10, 1948.

(2) Life insurance is held for one or more of the following purposes: (a) To create an estate for the provision for dependents after the death of the insured. Protection of this type is generally based upon Ordinary Life Insurance, providing for a fixed premium payable throughout the life of the insured. Club policies, based upon the assessment principle are also held for this purpose; (b) To accumulate savings. In this type of insurance, premium payments cover more than the cost of the insurance protection involved, and these over-payments accumulate to the credit of the insured. Twenty-payment, or other limited-payment life policies accumulate substantial over-payments during the paying period for the carrying of the policy during later years. This surplus, or cash value, is available to the insured upon surrender of the policy. Endowment policies provide a still greater element of savings, often accumulating for the policy holder at maturity as much as he paid in premiums. This simply means that the insurance protection involved is covered by the interest earned on premium payments; (c) To provide a contingency fund for the liquidation of a debt in the event of the untimely death of the insured. Many people contract debts which they expect to be able to pay off within a given period, but whose death would cause difficulties in payment and possible loss for his dependents. The pure protection available for a specified period in Term Insurance is particularly suited to this purpose.

3. The contingency feature of insurance, while valid is not popular. It appears to be somewhat less applicable to farmers, where land purchases, for example, are usually of such long term as to make this protection costly.

Prevalence of Life Insurance.—The data for this study¹ include 5,661 farm business records obtained between 1931 and 1946. Of these, 2,572 represented farm operators who had life insurance at one time or another. Of this number, 1,514 operators had insurance in force at survey date. That is to say, for this sample, 45 per cent of the operators had purchased insurance at some time and about 27 per cent still had insurance in force. These operators contracted an average of 1.4 policies each, representing about \$2,900 of insurance, and retained about .9 policies each, representing an average of \$1,860 of insurance.

TABLE 1.—RELATIVE POPULARITY AND STABILITY OF THE MAIN TYPES OF LIFE INSURANCE

Type of policy	Percentage of Total	Percentage in Force	Percentage Cashed	Percentage Lapsed
Ordinary Life.....	15.6	61.8	4.6	33.6
Twenty-Pay Life.....	55.9	54.2	10.7	35.1
Other Pay Life.....	1.1	59.4	21.6	19.0
Twenty-Year Endowment.....	7.0	44.9	14.0	41.1
Other Endowment.....	2.9	72.2	4.1	23.7
Club.....	12.5	92.1	—	7.9
Other.....	3.2	66.7	1.8	31.5
No information.....	1.8	4.8	12.9	82.9
	100.0			

Types of Insurance.—In order to give an indication of the relative popularity and stability of different types of insurance policies the first and second policies of each operator were analyzed in these respects. The data are given in Table 1.

It will be noted that the twenty-pay life policy is the most popular type of life insurance among this group of farmers. There are two main reasons why this should be so. In the first place, the feature of a limited period of premium payments would be attractive to those who feel uncertain of their ability to keep up payments in the later years of their lives. In the second place, the relatively high cash values provide for a substantial recovery of payments in the event of a reduction in farm income that necessitated the discontinuance of premium payments. At the same time, twenty-pay life is one of the types of insurance most frequently cashed or allowed to lapse. In this connection, it is probable that the desirable features of this type of insurance have led to its purchase in situations where its relatively higher premium payments could not be consistently met.

The club type of insurance policy, commonly characterized by low premiums or assessments, is notable for the extent to which it is retained, over 90 per cent of all policies issued being still in force at survey date. While relatively less important than twenty-pay and ordinary life insurance policies, club insurance has enjoyed increasing popularity in the later years of the survey period.

In general, the insurance policies with considerable elements of savings tended to be larger than ordinary life and club policies which provide protection primarily. Savings policies were more popular among younger operators with fewer dependents, while older operators with more dependents appeared more concerned with protection. The situation with respect to club policies suggests that the low premiums ordinarily assessed have made protection available to

(¹) Since about 1931 the Economics Division and/or the Farm Management Department at the University of Saskatchewan, have conducted business surveys among Saskatchewan farmers. These surveys are based upon detailed record of the farm business which is obtained directly from the farmer by a trained enumerator. Each record includes the details of the life insurance experience of the farm operator. This paper presents a summary of the general life insurance practices of the farm operators interviewed in the course of these surveys.

many who need it but would find the cost of other types of insurance somewhat higher.

Cash-Values.—The cash surrender value represents the cash equity of the insured in his insurance policy. For the operators in this sample still having insurance in force, the average cash value of life insurance is \$682 per operator or \$440 per policy. Against this, there is an average indebtedness of \$120 per operator or \$77 per policy, leaving a net average cash equity of \$562 per operator or \$363 per policy. The cash value of insurance represents about 25 per cent of the face value of all insurance in force at the time records were taken.

For all the operators in the sample, the cash value of insurance held among them represented 5.7 per cent of their average net worth. Allowing for indebtedness, cash value of insurance represents about 4.8 per cent of net worth for the entire sample.

Farmers' Requirements for Life Insurance.—Purchases of life insurance should be determined by two sets of considerations:

1. The need, in relation to the individual financial and family situation, for the protection and savings features of insurance.
2. The ability to make promptly the regular payments required to retain life insurance in force.

In regard to both of these considerations, the position of farmers is somewhat unique. It has been noted that the security of dependents is in part provided for by the real and other estate which the farmer ordinarily accumulates over his lifetime. For this sample, the average net worth of all operators at survey date was about \$7,300. At the same time, farm income is subject to extreme fluctuations and instability. In periods of depressed yields and prices, insurance may have to be regarded as a non-essential and allowed to lapse.

There are differences between farmers, however, both in the need for life insurance and in the ability to pay for it. Tenants, for example, do not accumulate savings in real estate, and therefore both the savings and protection features of life insurance would be attractive to this group. The record of insurance held by the operators of larger farms suggests larger earnings and consequent ability to keep up the payments on insurance purchased, Table 3.

In general then, it may be said that the need of farmers for life insurance diminishes as their estate in terms of other assets is accumulated. The needs in individual cases will also vary in relation to the needs of the dependents it is desired to provide for. On the other hand, the amount of insurance that can be safely contracted is limited by the ability of the farm business to make the regular payments required to keep it in force.

TABLE 2.—PURCHASES AND STATUS OF LIFE INSURANCE FOR THE MAIN TENURE GROUPS

Tenure	Average Amount Contracted	Average Amount in Force	Per Cent in Force
	\$	\$	
Owners.....	3,070	1,817	59.2
Part-owners.....	2,775	1,652	59.2
Tenants.....	2,425	1,357	57.6

Appraisal of Farmers' Insurance Practices.—Reference of one or two particular farm situations with respect to insurance practices may indicate the appropriateness of the uses made of life insurance by farmers. In the case of tenure differences between operators, the suggestion is that tenants require more insurance protection than do owners, and that insurance provides a convenient form of savings alternative to purchasing land. The insurance practices of the main tenure groups is given in Table 2.

Contrary to the above considerations, tenants purchased less insurance than owners or part-owners, and retained less of it in force than did these other groups.

TABLE 3.—PURCHASES AND STATUS OF LIFE INSURANCE ACCORDING TO SIZE OF FARM

Acres of Farm Cropland	Average Amount Contracted	Average Amount in Force	Per cent in Force
	\$	\$	
Under 100.....	1,763	464	26.3
100-199.....	1,941	969	49.9
200-299.....	2,416	1,309	54.2
300-399.....	2,690	1,645	61.1
400-499.....	2,930	1,970	67.2
500-599.....	2,930	1,540	52.6
600-699.....	4,276	2,765	64.7
700-799.....	4,263	2,618	61.4
800-899.....	4,681	3,283	70.1
900-999.....	4,586	2,784	60.7
1,000 and over.....	5,971	3,980	66.7

On the other hand, the size of farm is closely and directly related to farm success and financial progress. The larger the farm then, measured in say acres of cropland, the better able the operator is to purchase life insurance. At the same time, in so far as larger operators own their holdings, the less in general should be their need for insurance. In Table 3 the relation of size of farm business to the insurance practices of the operator is indicated. The information contained in this table and in Table 2 indicates that purchases and retentions of life insurance by farmers vary directly with their ability to pay for it, rather than with their need for insurance.

In summary, it appears that farmers' purchases of life insurance have not been accurately based upon their particular requirements. The large proportion of lapsed policies indicates purchases in excess of ability to carry insurance. The pattern of purchases by particular groups also indicates an inappropriate selection of type and amount of insurance in relation to particular insurance needs.

In the case of lapsed policies, the inflexibility of premium payments in relation to variable farm income presents the greatest difficulty. The more successful retention of policies with low premiums suggests the desire of farmers for low cost insurance protection, which, if combined with flexibility of payment, would fill a real need among many farmers who combine the need for additional protection with an unfavourable paying position.

REVIEW OF LITERATURE

DEWHURST, FREDERICK J. & ASSOCIATES. *America's Needs and Resources*. New York, N.Y., The Twentieth Century Fund. 1947. pp. 812.

This monumental volume is a fact book of the American economic system and a guide to the future. In this volume, a group of American economic experts makes an estimate of the United States' human and industrial capacity and resources, and balances it against the probable needs and demands for 1950 and 1960.

The book is divided into six parts, 26 chapters, 32 appendixes, 225 tables, and 42 figures.

A listing of titles indicates the scope of this book: Basic Trends; Consumer Requirements; Capital Requirements; Government Costs and Foreign Transactions; and, Resources and Capacities.

One chapter is devoted to United States' agricultural capacity. It is written by Louis H. Bean, who divides his subject into three sections: Domestic Requirements for Agricultural Products; Physical Requirements for Expanded Capacity; and, Human Resources for Expanded Capacity.

In discussing agriculture's capacity there is a slight optimistic note. To quote,

"Indeed, the remarkable accomplishments of our agricultural industry in the peak war year were nearly equal to the task of providing our larger 1950 population with best-adapted diets while still leaving an export surplus of 15 per cent of our total farm production. . . . Such difficulties as will confront agriculture, indeed, are far more likely to arise from problems of surplus production rather than inadequate capacity."

The authors are convinced that America is fully equipped to outdo her wartime production record in the decade 1950 to 1960, and that if the past rate of growth can be continued through the next decade, United States can provide her people with still more goods and services than at the wartime peak, and with fewer hours of work.

However, in summing up the outlook for the future, Dr. Dewhurst concludes:

"There are good reasons to believe that the technological progress of the past will continue in the future, perhaps at an accelerated rate; but it would be a mistake to assume that further progress is inevitable. Whether we increase output per man-hour during the next decade by 18 per cent or by some other percentage—or not at all—will not be determined by 'projecting past trends'. It will be determined, as it has been in the past, by a multitude of actions and decisions on the part of individuals: inventors, industrial managers, entrepreneurs, investors, workers and consumers. It is this collective decision, conditioned by their hopes and fears, expressed in the halls of government as well as in the market place, that will determine whether we will continue to multiply the fruits of the Power Age".

MITCHELL, JOHN W., AND MARTH, PAUL C. *Growth Regulators for Garden, Field, and Orchard*. Chicago, The University of Chicago Press. 1947. pp. vii + 129.

This little book, published by the University of Chicago Press, is referred to as a practical handbook for a "homeowner, amateur gardener, farmer, professional horticulturist, or agricultural adviser".

The book is divided into seven chapters dealing with such topics as weed control, vegetative propagation and transplanting, prevention of growth in stored plant material, preventing fruit-drop, ripening fruit, improving fruit-set and the production of seedless fruit.

The authors tell how to use the new chemical "growth regulators" for lawn, garden, field, or orchard.

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The ECONOMIC ANNALIST

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THE ECONOMIC SITUATION

The gross national product at market prices, or the value of all goods and services produced will likely reach an all-time high of 15 billion dollars in 1948. This increase is due, mainly, to higher prices.

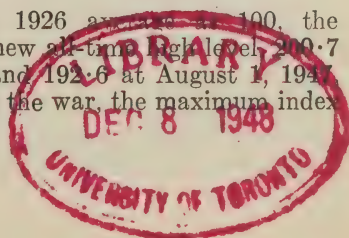
The index of industrial production for the first seven months of 1948 is slightly above that for the same period in 1947. Reflecting this increase, Canadian production of steel moved to a higher level in August, the month's output amounting to 263,054 tons as compared with 244,872 in the preceding month and 233,754 in the corresponding month last year. During the eight months ending August, 2.1 million tons were produced compared with 1.9 million in the similar period of 1947. Pig iron production was also increased in August, totalling 191,383 tons compared with 187,940 in July and 166,878 a year ago. The eight-month aggregate for this year stood at 1,411,016 tons compared with 1,297,184 in the like period of 1947. Reflecting the high level of activity in the Canadian mining industry, production of all but one of Canada's 16 leading mineral products was higher in July than a year ago. In the seven months ending July, production was advanced in all but two items. In July the decrease was in copper, while in the cumulative period, lead and salt were lower.

The number of dwelling units completed in Canada in the first eight months of 1948 is estimated at 43,600, according to the Dominion Bureau of Statistics. An increasing number of the completions are those which were commenced in 1948, and completions over the next few months should reflect the large numbers of dwellings started in April, May and June.

Exports.—Total exports to all countries in August, 1948, amounted to \$224,100,000, slightly above last year's corresponding total of \$221,300,000, but down \$26,800,000 from the July figure of \$250,900,000. Aggregate value for the eight months ending August was \$1,875,100,000 compared with \$1,786,300,000 in the similar period of 1947, an advance of almost five per cent.

The cumulative value of exports to the United States during the eight months ended August was \$878,933,000 compared with \$645,498,000 in the similar period of 1947, a rise of 36 per cent. On the other hand, imports from the United States showed a considerable drop for the same period. This development has eased the demand for United States dollars. For the eight months ending August 1948, the deficit in trade totalled \$277.1 million, down from \$644.5 million for the same period in 1947.

Employment and Payrolls.—Based on the 1926 average of 100, the Dominion index number of employment reached a new all-time high level, 200.7 at August 1, as compared with 198.0 at July 1, and 192.6 at August 1, 1947, previously the peak figure for mid-summer. During the war, the maximum index



ANNUAL AND MONTHLY INDEX NUMBERS
WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year	Wholesale Prices 1935-39=100			Farm Prices of Agricultural Products 1935-39=100	Commodities and Services used by Farmers(a) 1935-39=100		Cost of Living 1935-39=100	
	Farm Products (b)	Field Products (c)	Animal Products (d)		Equip- ment and Materials (f)	Eleven Factor Index (g)	Farm Living Costs(a) (h)	Urban Living Costs (i)
1913					85.4		80.1	79.1
1914					90.2	85.3	82.3	79.7
1915					96.9	91.6	86.5	80.7
1916					101.7	100.5	93.7	87.0
1917					140.7	140.5	111.5	102.4
1918					164.1	160.2	131.1	115.6
1919					169.1	167.9	143.0	126.5
1920					190.1	186.5	171.3	145.4
1921					147.4	152.5	139.9	129.9
1922					124.6	134.1	127.9	120.4
1923					118.3	130.6	128.3	120.7
1924					122.3	131.9	125.5	118.8
1925					123.2	131.8	123.9	119.8
1926	144.4	158.5	130.2		119.9	130.6	121.1	121.8
1927	138.6	149.4	127.8		119.9	131.2	119.8	119.9
1928	136.3	134.3	138.2		118.3	129.3	118.5	120.5
1929	140.8	137.2	144.4		117.6	127.9	117.3	121.7
1930	119.5	105.8	133.3		105.6	117.0	113.7	120.8
1931	78.9	65.0	92.7		92.2	100.9	103.9	109.1
1932	65.5	60.4	70.5		89.3	93.3	97.8	99.0
1933	69.3	69.3	69.2		88.8	89.8	95.8	94.4
1934	83.5	80.5	86.5		96.8	95.5	97.9	95.6
1935	89.2	84.4	94.1	88.0	95.6	95.4	97.9	96.2
1936	97.9	102.2	93.7	96.9	98.7	98.1	98.3	98.1
1937	117.4	128.9	106.0	119.7	108.4	105.3	102.9	101.2
1938	102.9	100.9	104.8	105.0	101.2	101.7	101.9	102.2
1939	92.6	83.7	101.5	91.8	95.7	99.3	99.5	101.5
1940	96.1	85.4	106.7	96.8	101.8	106.8	108.5	105.6
1941	106.6	88.9	124.4	110.2	107.8	116.1	114.1	111.7
1942	127.1	109.7	144.6	133.1	119.2	131.6	119.0	117.0
1943	145.4	129.0	161.8	157.8	122.4	143.4	121.7	118.4
1944	155.3	144.5	166.1	172.3	126.0	148.0	122.8	118.9
1945	162.8	155.4	170.2	180.7	125.9	152.1	123.2	119.5
1946	171.0	160.9	181.2	192.5	128.0	157.0	127.1	123.6
1947	183.5	166.8	200.2	203.7	139.5	169.3	138.3	135.5
1947								
June	181.7	163.6	199.8	203.3				134.9
July	184.2	170.8	197.5	203.4				135.9
Aug.	185.0	170.1	199.8	205.7	146.3	178.4	146.5	136.6
Sept.	188.1	170.3	205.9	208.8				139.4
Oct.	187.5	172.1	202.9	208.6				142.2
Nov.	192.8	181.2	204.4	211.8				143.6
Dec.	200.1	184.0	216.1	217.9				146.0
1948								
Jan.	212.3	185.7	238.8	231.6	169.8	187.6	155.3	148.3
Feb.	210.1	181.8	238.4	231.4				150.1
Mar.	211.0	181.1	240.9	231.2				150.8
Apr.	215.7	185.9	245.5	233.7	172.9	196.2	163.7	151.6
May	222.0	192.9	251.2	238.5				153.3
June	232.7	200.4	265.1	248.5				154.3
July	233.7	197.0	270.4	250.4				156.9
Aug.	232.2	178.7	285.8	255.8	177.0	202.3	169.5	157.5
Sept.	230.2	172.6	287.9	252.8				158.9

(a) Revised July, 1948 by The Dominion Bureau of Statistics.

(b) Canada. Dominion Bureau of Statistics, Prices Branch. *Prices and Price Indexes*. (Mimeo). Ottawa. Monthly. Wholesale prices of products of Canadian farms.

(c) Ibid (b). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid (b). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agricultural Division. *Index Numbers of Farm Prices of Agricultural Products*. (Mimeo). Ottawa. Monthly.(f) Canada. Dominion Bureau of Statistics, Prices Branch. *Price Index Numbers of Commodities and Services Used by Farmers*. (Mimeo). Ottawa. Jan., Apr. and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) *Price Index Numbers of Commodities and Services Used by Farmers*. Includes food, clothing, fuel, household equipment, health, maintenance and miscellaneous.(i) *Prices and Price Indexes*. Includes food, rent, fuel and lighting, clothing, home furnishings and services, miscellaneous and retail prices of commodities.

for August 1 was 185·9, in 1943. Construction and certain other non-manufacturing industries reported decidedly greater activity at the beginning of August this year.

The advance index number of payrolls at August 1 showed a gain of 1·8 per cent as compared with July 1. The advance figure of per capita weekly earnings of persons employed by leading firms in the eight major industrial divisions stood at \$40·66, a new high in the record dating from June 1, 1941. The figure at July 1 this year was \$40·48, and that at August 1, 1947, \$36·53.

All provinces, except Ontario, shared in this expansion of employment. The decline in Ontario was insignificant, less than half of one per cent. During the month of September, employment in Canada reached its seasonal peak in most parts.

The continued high demand in both domestic and foreign markets for manufactured goods will likely sustain employment at its present high level throughout the remainder of the year. Demand for workers in manufacturing industries has increased during September but much of this is due to the need for replacements for students returning to school.

Canadian labour income in the month of July, 1948 is estimated at \$596 million. This figure is \$11 million higher than the corresponding total for June and \$64 million or 12 per cent higher than that for July, 1947. The increased total reflected greater aggregates of earnings in construction, transportation and agriculture. The estimated two per cent rise in the total wages, salaries and supplementary labour income from June to July was paralleled by a two per cent increase in the Dominion cost-of-living index between June 1 and August 1.

The labour income for the first seven months of 1948 is well above the 1947 total for the same period—\$3·9 billion and \$3·4 billion, respectively.

Prices.—The general index number of wholesale commodity prices, on the base 1926=100, rose sharply in August and reached 158·2 in September, the highest since August 1920, when the index stood at 160·2. The record high figure for this index is 164·3 registered for May of that year.

This year's September index stands ·4 above that for August, 6·2 points above that for July and 24·2 points above September last year. All sub-group indexes except industrial materials increased over August this year.

As regards decontrol, on July 31, 1948, lard, shortening, soap, and oils and fats used in their production, were decontrolled. But on July 9, ceilings were put on imported apples and onions, and on August 19 controls were reimposed on wheat flour prices.

Cost of Living.—Urban and farm people find their cost-of-living more expensive. The urban cost-of-living index rose 1·4 points between August 2 and September 1 (1935-39=100), and another 0·7 points in September to reach 159·6 on October 1. Foods, clothing and home-furnishings accounted for the major part of this advance.

On October 1 last year the index stood at 142·2. From August, 1939 to October, 1948, the increase in the cost-of-living index was 58·3 per cent.

Among the sub-groups, the food index mounted from 203·9 on September 1 to 205·4 on October 1, substantial increases in eggs, citrus fruits and meat prices over-balancing seasonal reductions in vegetables. Changes in coal and coke caused the fuel and light series to rise from 128·5 to 128·8. Clothing rose from 179·9 to 181·0 as fall prices for many lines of men's and women's wear came into effect. The home-furnishings and services index rose from 164·2 to 165·1.

Farm family living costs increased from 146·5 in August, 1947 to 169·5 in August, 1948 (1935-39=100), or 15·7 per cent. Farm living costs from April, 1940 to August, 1948 increased by 59 per cent.

THE HAVANA CHARTER FOR AN INTERNATIONAL TRADE ORGANIZATION¹

A. E. RICHARDS⁽²⁾

In February 1946, the Economic and Social Council of the United Nations adopted a resolution calling for an international conference on trade and employment to consider the creation of an International Trade Organization (ITO). The Council also established a Preparatory Committee of the 18 countries composing its membership to arrange for the conference and prepare a draft Charter for such an organization.

The First Session of the Committee convened in London in October 1946, the Drafting Committee met in New York in January 1947 and the Second Session of the Preparatory Committee which met in Geneva on April 10, 1947 concluded its preparatory work in August 1947.

The Conference which met at Havana on November 21, 1947, and ended on March 24, 1948 drew up the Havana Charter for an International Trade Organization to be submitted to the Governments represented. The acceptance of the Charter now awaits consideration by the respective governments.

The ITO Charter deals with broad principles of full and productive employment, economic development and reconstruction and in more specific terms, with matters of commercial policy, restrictive business practices and inter-governmental commodity agreements. It is contained in 106 Articles and divided into 9 Chapters.

CHAPTER I—PURPOSE AND OBJECTIVES

The first chapter of the Havana Charter sets down in general terms the guiding principles to which members undertake to adhere in their commercial and economic relations with one another. It brings the Trade Charter into direct relationship with the Charter of the United Nations by reference to Article 55 under which the United Nations agree to promote higher standards of living, full employment, and conditions of economic and social progress and development. With this purpose before them, the nations which accept the Charter of ITO pledge themselves individually and collectively to attain the following objectives:

- (1) To increase income, demand, production, consumption, and exchange of goods;
- (2) To foster economic development, particularly of those countries which are still in the early stages of industrial development, and to encourage international investment;
- (3) To promote equal access of all countries to markets, products, and productive facilities;
- (4) To reduce tariffs and other barriers to trade and to eliminate discriminatory trade treatment;
- (5) To enable countries, by increasing their opportunities for trade and economic development, to abstain from harmful restrictive measures;
- (6) To facilitate, through consultation and co-operation, the solution of problems relating to international trade, employment, economic development, commercial policy, business practices, and commodity policy.

CHAPTERS II TO VI

These chapters of the Charter deal with the functional tasks of the organization. Herein are the rights and obligations which countries enjoy and undertake through membership in ITO. Chapter II deals with employment and economic activity and points out the importance of employment, production and demand within each country for the maintenance and expansion of international trade.

¹ The first article in the series on the charter for an international trade organization appeared in *The Economic Annalist*, August 1948, p. 61.

⁽²⁾ Attended Geneva meetings and Havana Conference as adviser on Canadian delegation.

In Chapter III all Members undertake to co-operate in facilitating and promoting industrial and general economic development, as well as the reconstruction of those countries whose economies have been devastated by war.

The commercial policy sections of the Charter are contained in Chapter IV. This is the "book of rules" for good conduct in international trade. Specific and detailed procedures are laid down for the reduction of tariffs, the elimination of quantitative restrictions and the application of subsidies. State trading is recognized if non-discriminatory in character. A series of technical articles deals with such matters as freedom of transit, anti-dumping and countervailing duties, valuation for customs purposes and marks of origin. Another article sets out procedures for establishing customs unions and free trades areas.

The general policy of the organization toward restrictive business practices and international cartels is dealt with in Chapter V, and in Chapter VI the procedure for establishing inter-governmental commodity agreements and the obligations of Members regarding existing and proposed agreements are set down.

Certain sections of these chapters of the Charter will be reviewed in future articles with particular reference to agriculture. Discussion in the balance of this paper will be confined to the organizational provisions of the Havana Charter.

CHAPTER VII—THE ORGANIZATION

This chapter is divided into six sections under the headings (a) Structure and Functions—Articles 71 to 73, (b) The Conference—Articles 74 to 77, (c) The Executive Board—Articles 78 to 81, (d) The Commissions—Articles 82 and 83, (e) The Director-General and Staff—Articles 84 and 85, (f) Other Organizational Provisions—Articles 86 to 91.

Membership.—The original members of ITO are those countries which were invited to the Havana Conference and whose governments accept the Charter. In accord with Resolution 62(V) of the Economic and Social Council, seventy-five countries were invited to send representatives to the Havana Conference. Of these countries, eighteen were not members of the United Nations. Practically all of the trading countries of the world were asked to attend. Spain was not invited. The USSR, Yugoslavia, Albania, Bulgaria and Hungary were invited but did not attend. Czechoslovakia attended and signed the Final Act of the Conference. In all, fifty-six countries attended the conference and fifty-four signed the Final Act. In signing the Final Act representatives certified that the text of the Charter was authentic and that they would refer it to their respective governments for consideration. Argentina and Poland attended but did not sign the Final Act. Membership still remains open to the nineteen countries which were not represented at Havana and to the two countries which did not sign. They will be admitted on equal terms with the signatories of the Final Act if their governments accept the Charter before September 30, 1949. Following that date, provided the organization has become established, all countries whose governments have not accepted the Charter will be regarded as non-members. It is the aim and hope of the framers of the Charter that ITO will be a world-wide organization in which all countries will co-operate in trying to improve international trade practices. Countries which do not accept the Charter by September 30, 1949 and those countries which were not on the Havana invitation list may be admitted to membership if approved by a simple majority vote of the Members in Conference. Special membership provisions in the article apply to separate customs territories, trust territories, special regimes and territories under military occupations.

Functions.—This article re-affirms authority of the organization to perform functions provided elsewhere in the Charter. Among the additional functions contained in Article 72, the organization is authorized to collect, analyse and publish information relating to international trade and commerce and to encourage and facilitate consultation among members on questions relating to the provisions of the Charter.

Structure.—Article 73 makes formal provision for a Conference, an Executive Board, Commissions which may be established and subsidiary organs. Authority is given to have a Director-General and staff.

Composition of the Conference.—The Conference consists of all Members of the Organization, i.e. all countries which have accepted the Havana Charter. Each Member is entitled to have one representative at the Conference table and may appoint alternates and advisers to its representative. In order to save travel expense for small and distant countries, an individual may act as representative at the Conference for more than one country.

Voting.—Each Member has one vote in the Conference. This means that at the conference table, Afghanistan's voting power is equal to that of the United States. The provision aroused considerable debate at Havana. A number of delegations advocated a system of weighted voting which would be related to the international trade of a country with less importance in the weighting system given to such factors as national income and population. The majority of the representatives however regarded the "one-member-one-vote" principle as the only democratic system and this plan was finally adopted.

Generally, decisions of the Conference will be taken by a majority of the Members present and voting. There are however about sixteen important cases specified in the Charter where a two-thirds majority of votes is required. For example, such a majority is required before a country can be released from an obligation imposed upon it under the Charter.

Sessions, Powers and Duties.—The Conference is to meet in regular annual session and will annually elect its President and other officers. All through the Charter, the performance of certain functions and the kinds of action to be taken are attributed to the Organization. Unless authority to act for the Organization is delegated by the Conference to the Executive Board or to another organ of ITO, the Members in Conference compose the Organization which has the basic task of formulating and executing policies within the framework of the Charter. As the Conference meets annually it would be unworkable for it to perform all the functions assigned to the Organization. Accordingly, except where specific powers and duties are expressly conferred or imposed upon the Conferences they can be assigned by a majority vote of the Conference to the Executive Board or subsidiary organs.

For example decisions on the admission of new members, the adoption of amendments and the suspension of Members from the Organization are powers conferred upon the Conference and cannot be delegated to another authority.

Article 77 attributes a very important power to the Conference which it alone can exercise and which can only be used in exceptional circumstances. This has reference to the waiver of obligations imposed on a Member by the Charter. Before a Member can be released from any obligation, the decision must be approved by a two-thirds majority of votes cast and such majority must comprise more than half of the Members. The use of the term "votes cast" instead of the usual term "present and voting", permits the use of telegraphic or postal vote in cases of urgency.

The Executive Board.—The Executive Board of the Organization will consist of eighteen Members of the ITO elected by the Conference for a term of three years by a two-thirds majority of the members present and voting. The Board is to be representative of the broad geographical areas to which Members of the Organization belong. Eight seats on the Board are to be assigned to countries of chief economic importance, as determined by their shares in international trade. The Board is also to be broadly representative of the different types of economies or degree of economic development to be found in the membership of the Organization. Based on these considerations, chief of which is its share in international trade, Canada is assured of a seat on the Executive Board.

Each member of the Executive Board has one vote and decisions of the Board are to be made by a majority of the votes cast. This method of voting allows for telegraphic or postal votes.

The Executive Board is the nerve centre of the Organization and is a continuously active and functioning body. It meets on call of the Chairman but on matters of urgency, decisions can be taken by telegraphic or postal vote. The Board is responsible for the execution of policies of the Organization and it will exercise the powers and perform the duties assigned to it by the Conference. It is expected that most of the "functions of the Organization" will be performed by the Executive Board. If commissions are established, the Board will assign tasks to such bodies and supervise their activities.

The Commissions.—The Havana Charter provides that the Conference may establish such commissions as may be required for the performance of the functions of the Organization. They report to the Executive Board and perform such tasks as the Board may assign to them. It is expected that permanent commissions will be established under the Board to carry out detailed and technical work in the following fields: Commercial Policy, Inter-governmental Commodity Agreements, Restrictive Business Practices, and Economic Development. Provision is made for representations of the United Nations and other inter-governmental organizations on the commissions. This would apply to the participation of the Food and Agriculture Organization on a Commodity Agreements Commission.

The Director-General and Staff.—The chief administrative officer of the Organization will be the Director-General and it is generally recognized that the successful establishment of the Organization will depend to a large degree on the competence and judgment of the man in this key post. The Director-General will have a staff to assist him and on the authority of the Executive Board he may appoint Deputy Directors-General. The Charter authorizes the Director or his representative to participate without the right to vote in the meetings of any of the organs of the Organization. He will present to the conference an annual report on the work of the Organization and the annual budget estimates and financial statements of the Organization.

Relations with the United Nations and Other Organizations.—Provision is made to bring the ITO into relationship with the United Nations as one of the specialized agencies referred to in Article 57 of the Charter of the United Nations. The ITO will thus be brought under the Economic and Social Council on a level with the International Monetary Fund, the International Bank for Reconstruction and Development, the Food and Agriculture Organization and the International Labour Organization.

The Charter provides as a basic principle that the ITO should not attempt to take action which would involve passing judgment in any way on essentially political matters. Such questions are deemed to fall within the scope of the United Nations and are not subject to the provisions of the ITO Charter.

The Charter directs the Organization to make arrangements with other inter-governmental organizations which have related responsibilities, to provide for effective co-operation and the avoidance of unnecessary duplication of work. This is to be attained by joint committees, reciprocal representation at meetings and the establishment of other working relationships. An example of such co-operation is to be found in the Commodity Agreements section of the Charter which provides for the active participation of FAO in initiating an agreement and convening a commodity conference. Another case where close co-operation between these two organizations is required in order to avoid duplication is in the field of international statistics on production, utilization and trade in food and agricultural products.

RELATIONSHIP OF THE POULTRY FLOCK TO OTHER FARM ENTERPRISES ON NOVA SCOTIA FARMS¹

G. C. RETSON

Aside from the inclination and ability of the farm operator to care for poultry, one of the most important considerations in a study of poultry production is the relationship of the poultry flock to other farm enterprises. In Nova Scotia poultry production is successfully combined with a variety of enterprises on the various types of farms studied. In each case, however, certain special adjustments in management or differences in practices arose out of the various combinations of enterprises.

Farms included in the poultry survey were scattered throughout the province, the greatest concentration being in the Annapolis Valley, the main centre of poultry production. The farms differed widely in size, organization and type of farming and included most of the combinations of enterprises carried on in the province. They ranged in size from small part-time farms of a few acres to dairy, fruit or mixed farms with over 100 acres in crops. The fruit and mixed farm groups maintained extensive crop and livestock enterprises in addition to the poultry flock. The average total farm capital amounted to \$12,982 of which \$3,270 was invested in the poultry business.

For purposes of analysis the farms were grouped according to type of farming, the basis of classification being the number of productive man-work units in the various enterprises. Of the 108 farms studied 42 were classified as poultry farms, 28 as mixed farms, 20 as fruit farms, 11 as part-time farms and 7 as dairy farms. Because of their small number the dairy farms were included in the mixed farm group, this being the group with which they were most comparable.

TABLE 1.—FARM BUSINESS SUMMARY—108 POULTRY PRODUCING FARMS 1946-1947

	Poultry	Mixed	Fruit	Part Time	All Farms
No. of Farms.....	42	35	20	11	108
	\$	\$	\$	\$	\$
Total Farm Receipts.....	7,477	8,689	13,369	4,880	8,697
Total Farm Expenses.....	5,715	6,658	7,669	2,915	6,103
Farm Income.....	1,762	2,031	5,670	1,965	2,594
Interest at 4%.....	382	605	806	244	519
Operator's Labour Income.....	1,380	1,426	4,864	1,721	2,075
Farm Perquisites.....	320	454	377	335	375
Operator's Labour Earnings.....	1,700	1,880	5,241	2,056	2,450

The farm business summary for the various types of farms is presented in Table 1. Operator's labour earnings on the poultry, mixed and part-time farms were fairly uniform as between groups, averaging \$1,700, \$1,880 and \$2,056, respectively, while on the fruit farms the average was \$5,241 per farm. Aside from the influence of various factors of management, the period covered by the study is generally regarded as one of the most successful years financially

¹ During the past year a study of the poultry business on Nova Scotia farms was carried on by the Economics Division, Marketing Service, Dominion Department of Agriculture. Records were secured from 111 farms covering operation of their poultry businesses for the period October 1, 1946, to September 30, 1947. A record of the overall farm business was also secured for all but three of these farms. As the poultry enterprises on these farms were discussed in the Economic Annalist, August 1948, the above article deals mainly with the overall farm business and the relationship of the poultry flock to other farm enterprises.

in the history of the Annapolis Valley, high yields of apples being accompanied by favourable price-cost relationships. Aside from the influence of various factors of management this situation, combined with the fact that the fruit farms were on the average much larger than the other types of farms, explains in large part the wide variation in labour earnings.

TABLE 2.—CASH RECEIPTS BY TYPE OF FARMING—108 POULTRY PRODUCING FARMS 1946-47

	Poultry	Mixed	Fruit	Part-time	All Farms
No. of Farms.....	42	35	20	11	108
	\$	\$	\$	\$	\$
Cash Receipts					
Poultry and eggs.....	6,148	3,095	3,339	2,559	4,273
Dairy cattle and dairy products.....	129	1,711	770	14	749
Hogs.....	89	343	244	43	155
Fruit.....	22	1,886	7,282	14	1,970
Other crop sales.....	304	419	1,299	163	267
Other.....	62	207	16	1,886	530
TOTAL.....	6,754	7,661	12,950	4,679	7,944

A study of the sources of cash receipts gives some indication of the size and relative importance of the enterprises on the various types of farms (Table 2).

The 42 poultry farms were highly specialized securing 91 per cent of their total cash receipts from poultry. On the basis of labour input, measured by the number of days of productive work performed on the farm, the average size of business on the poultry farms is the smallest of any of the groups. A number of the farmers in this group felt that their business was too small and planned to expand in the near future. Although some increase was planned in other lines such as small fruits and vegetables, they felt that most of the expansion should be confined to the poultry flock.

The mixed farms were considerably more diversified, 40 per cent of their cash receipts being derived from poultry. These farms were considerably larger than the specialized poultry farms and varied greatly in organization, poultry being combined with a variety of other enterprises. The most important of these were apples and cattle and dairy products which accounted for 24 and 22 per cent, respectively, of cash receipts. Farmers in this group frequently stated that dairy or fruit production was their basic enterprise and that they would increase or decrease the size of their poultry flock depending on its profitability. Many of the farm operators in the group had expanded their flocks in recent years, often with a relatively small outlay for new buildings and equipment. Their general reaction was that their future size of flock would probably remain at about the present level, but if necessary could be sharply reduced with little loss in capital. This group kept fewer layers than the poultry or fruit farms, but placed considerably more emphasis on cockerels and capons. The average size of business on farms in the fruit group was twice that of the poultry group on the basis of labour input. On the fruit farms only 26 per cent of the total cash receipts came from the poultry enterprise. Apple sales amounted to \$7,282 per farm and accounted for 56 per cent of cash receipts. Other crop sales made up 10 per cent of cash receipts and cattle and dairy products 6 per cent.

Operators of fruit farms have taken advantage of the diversification and improved utilization of labour made possible by their poultry flocks in the adaptability of the enterprise to the seasonal nature of fruit production. Poultry flocks provide the main activity and source of income on these farms during the winter months, but are generally disposed of when the rush of spring work

begins. Work on poultry during the summer months is kept to a minimum. A number of the fruit farms purchased all of their pullets in the fall. Most of those raising their own flocks purchased sexed pullets.

The part-time farms obtained \$2,559 or 54 per cent of total cash receipts from poultry and \$1,886 or 40 per cent of total cash receipts from miscellaneous sources, including work off the farm. Receipts from work off the farm, however, represent practically a net return and are therefore the main source of net income on these farms.

The poultry enterprises on the part-time farms were on the average less successful than those on the other types of farms. This was particularly the case on farms where the flock received irregular attention due to the operator's absence because of employment off the farm. A number of these farms, however, had highly successful poultry enterprises. In most of these cases the operator's wife or some member of the family took and active interest in the flock.

TABLE 3.—MEASURES OF EFFICIENCY IN MANAGEMENT AND THEIR RELATION TO LABOUR EARNINGS AND POULTRY RETURNS—108 POULTRY PRODUCING FARMS 1946-1947

Type of Farm	Farms	Total Man-Work Units	Man-Work Units Per Man	Layers	Per cent Lay	Daily Labour per 100 Birds	Labour Earnings	Poultry Labour Returns per Hour
	No.	No.	No.	No.	%	Mins.	\$	c.
Poultry.....	42	340	240	680	53	40	1,700	88
Mixed.....	35	468	252	390	52	36	1,880	83
Fruit.....	20	683	328	424	56	35	5,241	84
Part-time.....	11	458	315	319	51	46	2,056	67
Total or average..	108	457	271	495	53	39	2,450	85

A comparison of some of the factors determining efficiency in management as between types of farms is presented in Table 3. As stated above the combination of a number of fairly large enterprises along with apples gave the fruit group a much larger size of business with its resulting greater labour efficiency and higher labour earnings under favourable conditions. The general efficiency of the farms in the fruit group is also reflected in their high standing in factors relating to poultry management. As a group they had the highest per cent lay and were able to care for their birds with less labour than the other groups.

The specialized poultry farms had a larger average number of birds in their flocks and with a reasonably high per cent lay obtained average poultry labour returns of 88 cents per bird which was higher than that of the other groups. Although the poultry group attained a high standard of efficiency in the poultry enterprise the fact that the overall average size of business in this group was considerably below that of other groups which had a greater variety of enterprises, would appear to be the main reason for their lower earnings.

The difference between the urban and farm cost-of-living can be explained by the difference in their composition. The fact that rent is omitted from the farm index will, by itself, largely account for the sharper rise in that index, because in the urban index rent has risen much less than the other components and has therefore exercised a stabilizing influence. Another factor which has from time to time caused a faster rise in the farm index—particularly during the war—has been the omission from the food group in that index of milk, eggs, bread and potatoes, and the relatively little weight given to butter. Under war-time controls most of these items were more stable than other foods.

CHANGES IN FARM FAMILY LIVING IN THREE AREAS OF THE PRAIRIE PROVINCES, 1942-43 TO 1947

MARGARET A. MACNAUGHTON

Farm family living levels on 416 farms in west central Alberta, west central and northern Saskatchewan rose 23 per cent between 1942-43 and 1947. This rise was reflected in larger outlays for living, new expenditure patterns, improved farm housing and increased numbers of conveniences in the home. The farm business also showed signs of progress with a shift to more stable farm organization, a significant trend toward land ownership and a fifty per cent decrease in average farm debt.

These findings were the result of a study conducted by the Economics Division of the Dominion Department of Agriculture, in co-operation with the Welfare Branch of the Department of National Health and Welfare and the Universities of Saskatchewan and Alberta, in 1943¹ and 1947.

The 622 farms studied in west central Alberta, west central and northern Saskatchewan during 1942-43 were revisited in 1947, but records were obtained from only 416 of the original families still in the districts studied and eligible as "more than one-person" households.

Higher income levels during the five-year period were mainly responsible for the farmers' improved position. In 1947, however, with supplies of farm machinery and building materials again available, farmers' expenditures exceeded their current year's income by drawing on savings and reserves for capital improvement.

Even after price increases were considered, expenditure levels showed a decided rise. Food, the largest expenditure item, showed the smallest proportionate increase; in west central Saskatchewan outlays in 1947 were smaller than in 1943 after allowing for price rises. This was possible as cash expenditures were only half of the total farm food cost and the western farm price index for food had risen only about 10 per cent by the end of the survey year, July 1, 1947. In 1943 the outlay for food and clothing constituted over half (55 per cent) of the cash living expenditure in west central Alberta, and almost 60 per cent in west central Saskatchewan. In 1947 the outlay for the same two categories made up only 43 per cent of the total cash living expenditure in both areas. In northern Saskatchewan in 1947, food and clothing still comprised one-half of the cash living expenditure; in 1943 they had accounted for 64 per cent.

The greatest percentage increases were evident for operational goods and services, education and recreation. Automobile expenses doubled, educational and recreational expenses increased two and one-half to three times between 1942-43 and 1947. Donations to church and charity and gifts tripled. More families were spending more for vacations and on the average were spending as much for vacations as for education.² However, the average farm family spent less than ten dollars annually for reading material. Few families had any life insurance even in 1947 although more were protected than in 1942-43.

Increasing incomes had not brought about much change in the exteriors of the farm homes, but there had been a marked improvement in interior finish since 1942-43. Housing space was definitely not a problem. By 1947 families in the rural areas studied possessed more radios, passenger automobiles and telephones than their urban neighbours. Although they lacked many conveniences that might be considered essential by a city dweller, the proportion

¹ Edwards, F. M. *Farm Family Living in the Prairie Provinces*. Economics Division, Marketing Service, Dominion Department of Agriculture, Pub. 787, tech. bull. 57, March 1947. Edwards, F. M., Elliott, H. E. and Turnbull, H. M. *Levels of Living of Farm Families in Representative Areas of Western Canada*. Economics Division, Marketing Service, Dominion Department of Agriculture in co-operation with the Universities of Alberta and Saskatchewan (unpublished).

² Expense for education as calculated does not include school taxes which are payable with general taxes.

of farm families possessing most conveniences had increased markedly since 1942-43. More than ninety per cent of the families studied had radios and sewing machines, but only one-half had power washers and one-third had kitchen sinks. One family in five had electricity and one in ten had running water.

Community development had made a considerable contribution toward raising the farm family living level. Most facilities were closer to the farm home and more services, particularly medical ones, were available in 1947 than in 1942-43.

The instability of, and fluctuations in, net farm income from year to year makes it difficult to measure levels of living of farm families solely from a study of the relationships between income and expenditure. Families often enjoy higher or lower levels of living than farm income for the current year would seem to justify. Furthermore, similar levels of expenditure may represent a wide variety of levels of living due to differences in prices, markets, standards or management. The level of living scale for Rural Western Canada developed by Miss Edwards in 1943¹ provides a measure which reflects the *long term* accumulation of material and cultural possessions and participation of family members in group activities, and relates them to the "prevailing average" standards of those of the entire population in the district in which interviews were made. This measure of level of living includes the use of goods purchased in past years as well as the use of newly purchased goods and services. Miss Edwards' scale included 27 items. The levels shown by scores on these items are relative; the highest possible score is 27.

In terms of this socio-economic scale, living levels were up 23 per cent. Only four per cent of the entire group had scores less than five in 1947 as compared to 13 per cent in 1942-43. On the other hand, while less than 20 per cent of the families in 1942-43 had scores of more than 20, almost 33 per cent had attained this relatively high level of living by 1947. As the level of living as measured by this scale rose, and the dollar amount spent on the various consumption categories increased, the proportion of total living expenses spent on the 27 items varied. In general, the proportion of total living expenditure devoted to food and personal items declined at progressively higher living levels. Conversely, expenditure proportions for other groups tended to increase at higher income levels, notably, for operational goods and services, education and recreation. Clothing and health were borderline cases remaining fairly constant at successive levels of living although the proportion spent on clothing tended to decrease. Families with level of living scores below five used almost three-quarters of the living expenses to pay for food and clothing, while families with scores of 20 or more used little more than two-fifths of their total expenditure to pay for items in these categories.

The net effects on farm family living of an increase in disposable income² were:

Debts were cut in half;

Increased savings and reserves during the earliest of these years allowed for greatly increased capital expenditure in 1947 when supplies were again available;

Family living levels rose;

The 1947 expenditure patterns allowed a much larger proportion of the family outlay for categories other than food, clothing and shelter, and farm families had many more conveniences and material possessions than in 1942-43.

¹ F. M. Edwards. *A Scale for Rating Socio-Economic Levels in Rural Western Canada*. A dissertation submitted to the Faculty of the Division of the Social Sciences in candidacy for the degree of Master of Arts, Department of Sociology, University of Chicago, August 1946. (unpublished).

² Receipts other than from farming operations played a very small role in the income picture.

RISK AND UNCERTAINTY¹ IN AGRICULTURAL ENTREPRENEURSHIP**G. P. BOUCHER**

Decisions made by the farmer with regard to the organization and management of his farm are marked by a high degree of uncertainty. He has to contend with most of the risks encountered by any other type of entrepreneur and with additional risks resulting from the character of the weather and of the biological processes involved.

As in industry some of the risks are insurable. The farmer may, for instance, insure against fire, lightning, hail, windstorms, and floods. Other risks like diseases, insects and weather are inherent in the farm business and only indirectly insurable through livestock or crop insurance. Price variations and the effects of various economic and agricultural policies also constitute important types of uncertainties against which no direct form of insurance can be provided. In this article, we shall be concerned mainly with those types of risks, or uncertainties which may be reduced by means other than formal insurance.

Yield Uncertainty.—Weather, insects and plant diseases constitute a very important farm risk-bearing problem. More than any other type, these risks contribute to the wide and continuous variability of crop yields and may determine a long sequence of losses from low crop yields or crop failures. Yield variability necessitates temporary and sometimes difficult adjustments in farm planning and organization. Decisions may call for replanting, finding alternative sources of feed, and readjustment of the labour program. It may also be necessary to look for additional sources of income if prospects for the main crop are decidedly poor.

The degree of yield risk which the farm business can assume will vary with the ease of accumulation of reserves and the flexibility of the organization. Reserves of feed and seed can be accumulated during years of good yields or by reserves of cash and other assets and reduction of outstanding liabilities when increases in yields are not counterbalanced or outweighed by a reduction in market prices.

Farm living standards may be so lowered and shortage of working capital may so reduce farming efficiency after a succession of low crop yields in a given area that governmental assistance will become necessary. Governmental share in risk-bearing might then be justified on sociological and economic grounds and the degree to which individual farm business losses would be alleviated might depend on the normal contribution to national income of the type of farming in the area concerned.

Low yields may also come as a result of serious soil fertility depletion. This condition may be due to poor management and cultural practices or to widespread soil erosion and other factors beyond the control of the individual farmer. In the latter case, insurance against further low crop yields is better provided through large scale co-operative effort or through governmental action.

Price Variations.—Price variations probably entail greater risks in agriculture than in industry generally due to the slow turnover of capital, heavy overhead costs and the small size of the average farm unit. Nature sets the pace and adjustments cannot be made quickly. Personal and family considerations, specially on family farms, usually contribute to a slowing down of the rate of adaptation to economic changes.

Industry may respond to price declines in a number of ways. In the most serious cases, it may close down completely; in less extreme cases, it may discharge some help, stop or limit purchases of raw materials and cease paying

¹ "Uncertainty" is used here in its broad sense. No distinction is made between risks as expectations known with certainty and uncertainties for which probabilities cannot be measured.

dividends. In other words, the entrepreneur in a manufacturing concern will limit production and wait for more favourable prices before he resumes a more normal production. The main sufferer will probably be the industrial worker who will have to accommodate himself to a lower rate of pay or become unemployed.

The farmer, on the other hand, will attempt to substitute his own and his family's labour for the factors of production he generally has to hire or purchase. This is an adjustment which inevitably results in a reduced rate of returns for the services of the farmer and his family.

When, owing to a fall in prices, the income derived from a particular crop falls below the usual returns to labour and capital, the farmer may shift to the production of a more profitable crop if there is such a crop to which he may shift readily. In the absence of a favourable alternative, he will have to continue to produce the same crop as long as the market price is sufficient to cover his cash outlays.

The farmer must make his major adjustments to price changes very cautiously. More outlook information is now available and basic information on economic condition enjoys a wider distribution but this type of information although it provides very useful guides, does not permit an accurate judgment of the future.

Uncertainty and National Policies.—The individual operator must also be mindful of the effects of national policies on his own behaviour, particularly when these policies are concerned with subsidization of a certain line of production, price control or stabilization and import or export contracts made with other nations. Generally speaking, these various policies add a welcome element of certainty.

It is otherwise with policies adopted by other countries. If a farmer is a producer of commodities which find their main outlets on export markets, he will have to face the possibility of the adoption of protectionist and other restrictive policies, of a change of market or suspension of import contracts by the importing countries, competition from lower cost producing countries and other unfavourable situations which add to uncertainty and may disrupt his production and marketing problems.

Production Cycles.—The farmer expects to operate under a system of farming which will facilitate the maintenance of his farm as a stabilized income unit. In planning his organization and his seasonal operations, he must concern himself with future rather than with present prices. The value of his fixed investments is determined largely by his anticipation of their earnings in agricultural production. The biological processes involved in farm production give rise to production cycles of varying length and these processes cannot be stopped to facilitate adjustment to changing economic conditions.

Let us suppose that the price of potatoes at planting time is 75 cents a bushel or 25 cents higher than total anticipated costs of production and marketing and that the farmer expects that his fall crop will bring him a higher or at least an equivalent price. If the prices were to fall during the growing season, nothing could be done to stop or limit the growing process while awaiting for a more favourable price situation. At harvest time, the price might very well have fallen to 40 cents. With harvesting, storage and selling costs amounting to 18 cents, 8 cents of which represent cash outlays, the farmer will still find it preferable to sell now or at some later time at any price higher than 18 cents or even higher than 8 cents a bushel rather than abandon the crop because prices cannot cover all costs of production.

The dairy farmer might be confronted with an even more embarrassing situation. If prices of butter and other dairy products have commenced to decline, he cannot immediately decide to curtail production. In addition to the milking herd itself, he also has two-year-olds, yearlings and calves which he

might find preferable to feed, breed and add to his herd. Sales of part of this stock might then contribute to greater losses. The breeding and the selection of a good milking herd entail many years of effort and the sacrifice of that effort could only be justified if it were reasonable to assume that unprofitableness would continue for a considerable number of years and that a profitable alternative can be found for the use of labour and capital.

Decisions as to the type and size of production are affected by the period of waiting necessary before returns can be realized on the investment. Crops are usually harvested from three to as many as ten months after seeding and some, such as apple trees, take approximately 10 years before they reach profitable bearing age and have a production cycle exceeding fifty years. Livestock production cycles also imply a period of waiting for returns on investment. Three years, for instance, will have to elapse from the time a farmer increases his herd till he can expect a heifer to freshen among the stock he has added to his herd.

The flexibility of the time element offers at least a partial explanation of the slowness and hesitancy with which adjustments are made. Present production tends to be continued in the hope that the period of low prices will be temporary and for fear that the shift in production may no longer be profitable once the new product is ready for market.

Caution naturally underlies any decision that is made in an enterprise in which the main part of the investment is of a fixed character. Decisions to change output must precede by many months and even many years the actual marketing of the final product. This tends to discourage change. The latter may involve the whole farm organization and is limited by the arrangement of the crop rotation, the nature of the soil and the region.

Business Fluctuations.—Agriculture is a primary industry subject to violent income fluctuations when changes occur in the general level of business activity. The increasing degree of interdependence between the agricultural and the industrial economies also tends in times of declining business activity to react unfavourably on the agricultural economy.

Various suggestions and proposals have been made to deal with this problem of business fluctuations. They range all the way from public investment, wage and price policies to the stabilization of the volume of consumption, and monetary management. Any policy that might be adopted within agriculture would obviously be secondary to the broader policies designed to bring back levels of stable income and employment. Success in alleviating the adverse effects of business fluctuations will relieve the agricultural entrepreneur or what probably constitutes the greatest element of uncertainty in agriculture.

Uncertainty in Appraisal.—The high degree of uncertainty inherent in agriculture is probably more apparent to the farm appraiser than to any other individual interested in farming activities. Although land has a greater durability than most other resources, determination of its future earning capacity is nonetheless a very difficult problem. Variations in yields and prices cause wide fluctuations in income. These fluctuations must be incorporated into the capitalization formula by the addition of factors representing expected annual increases or decreases in returns. However, formulae, no matter how refined they may be, cannot cope with unavoidable errors in judgment and are unable to forecast the magnitude and direction of changes in soil fertility, market conditions, technological development and the influence of agricultural and other economic policies.

Another difficulty lies in the actual determination of future annual incomes. These are usually based on past incomes as determined by long-run normal production and long-run normal prices. However, the length of the period involved and the precision of adjustments made to eliminate unusual factors, do not necessarily offer a reliable estimate of future incomes.

A theoretical solution might be found in a functional approach whereby all factors affecting future prices would be taken into consideration. These factors, however, do not lend themselves to easy measurement and with present techniques it would be impossible to appreciate the extent to which they react on each other.

Nevertheless, this concept has great value to the practical man in that it brings into relief the many points which must be considered in planning operations or estimating the present value of future income. It also throws into sharp focus the high degree of uncertainty that accompanies expectations formed on the basis of insufficient knowledge of present and future conditions.

Research.—The problems of uncertainty which confront the agricultural economist and the farm entrepreneur present a real challenge to the research worker. Success in meeting this challenge will depend on advancement of fundamental research in economics and the pursuance of empirical research centering around agricultural entrepreneurship. Particular emphasis will have to be given to methods of obtaining and disseminating relevant information, and of flexibility and diversification of the farm enterprise.

RECENT CHANGES IN ALBERTA FARM LAND PRICES

T. H. ASKIN

The movement of the price of Alberta farm land started upward in 1942 following several years without change, and continued upward until by the end of 1947 the average price was substantially greater than that for 1941. The average price per acre of Alberta farm land for the years 1939-47 based on farm sales data assembled by the Dominion Economics Division at the University of Alberta⁽¹⁾ was:

<i>Year</i>	<i>Dominion Economics Division Price of Land</i>
	\$
1939	15
1940	15
1941	15
1942	17
1943	18
1944	21
1945	24
1946	26
1947	30

Land values reported to the Dominion Bureau of Statistics for Alberta averaged \$16 per acre in 1939 and \$25 in 1947. While the rise in land values reported to the Bureau was somewhat less than the sales prices reported herein, this indicated a similar upward trend.

The rise in land prices is a direct result of increased prices for farm products and higher farm incomes. The present upward trend of the prices received for farm products started in 1940. Increases were not great in 1940 or in 1941 and the net income of Alberta farmers actually fell in 1941 compared with the previous year, and the average price of farm land apparently remained unchanged. However, by 1942 Canadian surplus grain stocks had declined and, with the intensified demand for grain and other farm products due to war conditions, farm prices moved sharply upward between 1941 and 1942. Increased farm prices and a less rapid increase in farm costs coincident with higher production in 1942, with a resulting increase in net income, started the movement of land prices upward. Since then the increase has been uninterrupted.

¹ The details of farm land sales are solicited annually from real estate agents throughout Alberta by the Economics Division of the Dominion Department of Agriculture.

The sale price shown for each year includes the value of buildings, land suitable only for pasture, and cropland, representing the total of several values associated with the land. As the value of cropland alone provides a more significant measure for comparing the sale price, estimated values of buildings and pasture land were calculated and deducted from the sale price reported to the Economics Division.⁽¹⁾ It was found that the estimated average price per acre of cropland increased from \$21 in 1946 to \$29 in 1947. The estimated increase in price of the cropland alone in 1947 above that of 1946 was 38 per cent compared with an increase of 11.5 per cent in the sale price for all farm real estate. However, the rate of increase varied in different parts of the province.⁽²⁾ The total sale price per acre and the estimated price of cropland for each of the three regions and the whole area for the years 1946-1947 are shown in Table 1.

TABLE 1.—TOTAL SALE PRICE, ESTIMATED CROPLAND PRICE, AGRICULTURAL REGIONS, 1946-47

Region	Total Sale Price per Acre		Estimated Price of Cropland per Acre	
	1946	1947	1946	1947
	Dollars			
West Central.....	23	32	18	30
Southwest.....	32	37	29	44
Prairie.....	24	23	20	23
Total area.....	26	30	21	29

The 1947 average sale price of the total real estate was highest in the southwest, next highest in west central and least in the prairie, with the increase over the 1946 price occurring in the same order. The estimated price of cropland alone in 1947 and the price increase above that for 1946 were also highest in the southwest, next highest in the west central, and least in the prairie.

¹ The average building investment for 730 farms given in farm business records assembled from 1944 to 1947 by the Economics Division for representative areas of west central, southwest and the prairie agricultural regions of Alberta was used as a basis for determining the deductions made from the total sale price to obtain a bare land sale price. This amounted to \$5.00 per acre. A further \$5.00 per acre deduction for non-cultivable land was made from the bare land price to arrive at an estimated sale price for cropland alone.

² Emphasis was placed on obtaining a large number of sale reports representative of broad agricultural regions in Alberta. The three regions were west central, southwest and prairie. A more selective sampling than was made would be required to permit other than a limited classification of sale data.

Agricultural Region	Region Characteristics	Sales Reported	
		1946	1947
West Central.....	Soil: Deep black loam..... Annual rainfall: 17-19 inches..... Type of Farming: Mixed.....	106	176
Southwest.....	Soil: Shallow, black loam..... Annual rainfall: 15-17 inches..... Type of Farming: Grain and grain-livestock.....	32	11
Prairie.....	Soil: Dark brown and brown..... Annual rainfall: 13-15 inches..... Type of Farming: (1) Grain and grain-livestock..... (2) Irrigated area—sugar beets, canning vegetables, forage and cereal crops.....	14	54
Total Sales Reported.....		152	241

Price Change Comparisons.—It is of interest to compare the current farm land sale price with the assessed value. In the assessment of Alberta farm land, an attempt is made to set values according to capitalized income to be expected from the sale, based on the history of past yields and prices adjusted in reasonably future expectations. Buildings are excluded in setting valuations. These assessments are the only available values of all farm land and are used here as a basis for appraising changes in land prices.

The assessed value, the estimated bare land sale price, and the percentage excess sale price of assessed value are shown in Table 2.

TABLE 2.—ASSESSED VALUE, ESTIMATED BARE LAND SALE PRICE, AND PERCENTAGE EXCESS SALE PRICE OF ASSESSED VALUE, AGRICULTURAL REGIONS AND TOTAL AREA, 1946-47

Region	Assessed Value		Estimated Bare Land Sale Price		Percentage Excess Sale Price of Assessed Value	
	1946	1947	1946	1947	1946	1947
	Dollars				Per cent	
West Central.....	12	14	15	23	25	64
Southwest.....	14	13	26	32	86	146
Prairie.....	9	9	15	18	67	100
Total area.....	12	13	19	22	58	69

The excess of the sale price over the assessed value for 1946 and 1947 may be compared with similar information for the period 1936-40. The average assessed value of the land reported sold during the years 1936-40 was \$10 per acre, whereas the average sale price, including buildings, for the same land was \$15 per acre. With an allowance of \$5 per acre for the average building investment deducted from the average sale price the bare land sale price and the assessed value were about equal during 1936-40. The average price increase for all bare land sold throughout Alberta in recent years, up to 69 per cent in excess of the assessed value in 1947,—was substantial. However, the rate of increase varied between regions. The highest price and the greatest increase were in the southwest, next in the prairie region and least in west central.

TABLE 3.—PROPORTION ALL CASH OF TOTAL SALES, PROPORTION CASH PAID OF TIME SALES, ANNUAL PAYMENT ON TIME SALES, INTEREST RATE, ALBERTA 1946-47

Year	Cash Sales as Per- centage of Total Sales Reported	Percentage of Sale Price Paid in Cash	Time Sales		Most Frequent Interest Rate
			Annual Payment of Unpaid Balance		
			No.	Size	
	Per cent	Per cent		Dollars	Per cent
1946.....	64	50	5	850	5
1947.....	57	42	6	1004	5

Terms of Sale.—The terms of sale relate to the proportion of the total sale price paid in cash, size of the annual cash or crop instalments and the interest rate on the unpaid purchase price. The terms may affect the security of ownership. The contract terms of sale fixing future payments on debt may become intolerable during periods of unfavorable production, low prices or both, in relation to costs. Shown in Table 3 are the terms of sales reported in

1946 and 1947. Coincident with the decreased percentage of cash sales in 1947 from 1946 there were smaller first payments at the time of purchase, and the size of the annual payments increased.

Fewer cash sales in 1947 represents a decrease in the number of land buyers acquiring title at the time of purchase. However, the decrease may be greater than indicated, since the percentage of cash sales does not consider indebtedness in the form of a mortgage that may have been assumed by the purchaser. It is probable that some land involved in the reported sales were cash to the seller, but financed through a mortgage. That is indicated by a report from the Dominion Mortgage and Investment Association, Toronto. The number of farm mortgages issued in Alberta by 35 member companies increased from 43 in 1946 to 349 in 1947.¹

Supply and Demand.—The immediate supply of suitable farm land in Alberta is limited to existing farm units and readily improved raw and abandoned land. Under the stimulus of increased farm product prices and with efficient machinery available, the clearing of wooded land has increased the amount of improved farm land. However, since the clearing has been done principally on existing farm units in Alberta, thereby increasing the size of farms, clearing has not significantly increased the supply of land available for new farms.

The demand for land in recent years has been greatly stimulated by both farmers and non-farmers with cash available for investment. Continuing favourable farm prices made the investment in farm land appear attractive in comparison with other investment opportunities. Three main reasons were given for the purchase of farm land in 1946 and 1947. They are summarized in Table 4. Those purchasing land in order to start farming in 1946 and 1947 included renters acquiring ownership, sons taking over the home farm or nearby land, and farmers settling in a more favourable locality. The trend to larger

TABLE 4.—REASONS FOR PURCHASING ALBERTA FARM LANDS, PERCENTAGES OF TOTAL REPORTED, 1946 AND 1947 (¹)

Reasons for Purchase	1946	1947
	Reports 105	Reports 167
	Per cent	
To start farming.....	51	58
To enlarge present holdings.....	44	35
To re-sell.....	5	7

(¹) The reported reasons for the purchase of land exclude purchases for the development of small holdings and government settlement schemes.

farm units is indicated by the significant amount of land purchased to increase the size of existing farms. The increase in the proportion of land purchased for re-sale in 1947 over 1946 is not particularly significant when considered alone, but that as much as 5 per cent in 1946 and 7 per cent in 1947 was purchased for that purpose gives emphasis to the importance of speculation in relation to current land prices.

¹ The Dominion Mortgage and Investment Association, Toronto, is a voluntary association of 25 life insurance companies, 16 trust companies and 12 loan companies. About 35 of these companies have mortgage investments in Alberta. In addition to new farm mortgage loans in 1947 made by members of the above association, mortgages, agreements of sale and liens against land were acquired by other investors.

RURAL HOUSING

The Central Mortgage and Housing Corporation, in its report *Housing in Canada*, July 1948, briefly outlines the farm housing activities that come within the category of publicly-assisted house-building.

Veterans' Land Act, 1942.—House-building under the Veterans' Land Act during the first half of 1948 continued near the level of 1947, with 740 housing units started and 1,058 completed, as against 952 started during the corresponding period of 1947 and 903 completed. Expenditures on new housing construction, repairs and other services declined during the period, from \$6.3 million during the first half of 1947 to \$5.2 million in the same 1948 period.

Appropriations and applications for assistance approved for new housing construction during the first six months of 1948 amounted to \$3.9 million, representing 29 per cent of the total amount approved. In the same period of 1947, approvals for new housing construction were higher, at \$5.6 million, but represented only 21 per cent of the total amount approved under the Act during the period, indicating that house-building operations under the Act are declining less rapidly than overall activities, including the purchase of land and existing buildings.

In the field of current house-building, construction under the individual projects small holdings scheme dominates the scene, accounting for 283 of the total of 361 units completed during the second quarter of 1948; 498 out of a total of 601 starts; \$1.4 million out of \$2 million spent on new construction; and \$2.6 million out of a total of \$2.7 million approved for new housing construction.

Housing units completed in the period between September 23, 1943 and June 30, 1948, totalled 5,565. The number of applications for housing assistance approved in the same period were 36,916.

Canadian Farm Loan Act, 1927.—Lending for new farm houses continued at a moderate level with 16 loans, involving \$18,000 approved during the first half of 1948, as compared with 17 loans amounting to \$21,000 approved during the corresponding period of 1947.

The Farm Improvement Loans Act, 1944.—Loans for new farm houses under the Farm Improvement Loans Act, 1944, numbered 160 during the first half of 1948, with a total loan value of \$209,000, representing a decline of 37 per cent in terms of the number of loans and 35 per cent in terms of loan value from the corresponding period of 1947.

THE GROSS NATIONAL PRODUCT¹—1922 TO 1947

The Canadian gross national product at market prices ranged from a low of \$3.5 billion in 1933 to a high of \$13.4 billion in 1947.

The gross national product at market prices is defined as the value of all goods and services produced by the labour, capital, and enterprise of Canadian residents in a year, measured through a consolidated national accounting of all costs involved in their production. These costs include factor costs, that is, the aggregate of national income, as previously defined, and in addition, indirect taxes less subsidies and depreciation and similar business charges.

Between 1928 and 1933 Canadian production, measured at market prices, dropped 42 per cent, from \$5,985 million to a depression low of \$3,468 million. Apart from a slight recession in 1938, the gross national product moved steadily upward after 1933; but by 1939, the last pre-war year, it was still six per cent below the 1928 level.

¹ The fluctuations in Canada's annual output of goods and services over the 22 years from 1926 to 1947 are illustrated in figures contained in the annual report *National Accounts, Income and Expenditure* released by the Dominion Bureau of Statistics. The report contains for the first time balancing tables of the nation's income and expenditure back to 1926; previously published totals covered only the years back to 1938.

During the war years, production increased, reaching \$11,887 million in 1944. The following two years were marked by a slight levelling off, but in 1947 the value of goods and services produced reached an all-time high of \$13,375 million, an increase of 123 per cent over 1928, and of 139 per cent over 1939.

The gross national product at market prices, however, reflects both a change in physical output and a change in price. The Dominion Bureau of Statistics, in its report,¹ emphasizes this fact.

In 1947, the high level of investment in Canada in plant, equipment, housing and inventories of \$2,884 million absorbed 22 per cent of total output. This compares with an investment spending of \$116 million during 1933 which accounted for only three per cent of total output. In 1928, during the height of pre-war prosperity, investment spending was \$1,146 million, or 19 per cent of the total.

Personal expenditure on consumer goods and services was at a pre-war peak of \$4,383 million in 1929. It reached a low point of \$2,848 million in 1933—a decline of 35 per cent. Between 1939 and 1944, personal expenditure rose steadily from \$3,861 million to \$6,300 million, an increase of 63 per cent. Total expenditure rose even more sharply, and consequently consumer spending accounted for only 53 per cent of the total in 1944 as against 69 per cent in 1939. Personal expenditure continued to increase after 1944, and in 1947 reached \$8,888 million, or 66 per cent of total expenditure.

Personal income received by Canadians from all sources—earned or unearned, and including income received in kind as well as in cash—was at its highest pre-war levels, in 1928 and 1929, when it totalled \$4,547 million and \$4,532 million, respectively. The low was \$2,758 million in 1933. Between 1933 and 1939 personal income rose steadily, reaching \$4,291 million in the latter year. Personal income increased rapidly during the war, and in 1947 reached an all-time high of \$10,279 million, an increase of approximately 140 per cent over 1939. These figures, however, must be interpreted in the light of rising or falling prices, which affect the purchasing power of the dollar.

Personal direct taxes absorbed only one per cent of personal income in 1928. This proportion increased during the thirties, and reached a high of nine per cent during the war years 1943 to 1945. In 1946 and 1947, the proportion declined to approximately eight per cent.

¹ Op. cit. p. 1.

REVIEW OF LITERATURE

The New North-West. Edited by C. A. Dawson. Toronto, The University of Toronto Press. 1947. Pp. x + 341.

Canada's northland has been frontpage news ever since 1939. Defense, gold, oil, pitchblende, agriculture and population have been some of the stimuli that have in recent years attracted more and more attention from the Government and from other well organized investigators. Looking to permanent development, the Canadian Social Research Council, with the support of the Rockefeller Foundation, made a preliminary survey of this region in 1944, more especially the Mackenzie District and Yukon Territory. The results of some of the research are included in this volume.

The book is divided into 12 parts, dealing with such topics as: Administration, Minerals, Furs, Agriculture, Transportation, Health, Education and the Eskimos. There are also sections entitled *A Yukon Domesday: 1944*, and *A Mackenzie Domesday: 1944*, and *The New North-West*. For the researcher and others who wish to continue their study of the North-West this is an excellent bibliography.

The section on Northern Agriculture was written by William Dickson, a member of the Experimental Farms Service, Dominion Department of Agriculture. Mr. Dickson presents a brief review of some of the information now available on conditions affecting agriculture in the northern regions of Canada, and suggests some possible lines of future development. The author, in discussing future possibilities of agriculture in the Canadian North, states (with a number of modifications) that, "On the basis of past experience there are few grounds for anticipating any marked, spontaneous increase in the volume of agricultural production in Northern Canada, assuming no radical changes in population." He does indicate that, "There is definite need for improvement in the technique and materials of northern agriculture. This applies particularly to better adapted varieties of forage crops, vegetables, and small fruits, the management of northern soils and the control of insect pests. Livestock and poultry production in larger settlements such as Yellowknife present additional problems. In the far North the problem of 'permafrost'—permanently frozen subsoil—has important agricultural aspects. Expanding Experimental Farm activities . . . are designed to cover, in some degree, these northern problems."

SALTER, LEONARD A. Jr., *A Critical Review of Research in Land Economics*. Minneapolis, University of Minnesota Press. 1948. pp. 253.

Dr. Salter's study is a twin dissertation on the adequacy of research methodology in social sciences and on research in land economics in the United States. The title of his book is rather misleading. In effect, the main part and that which has been given the more scholarly treatment and which gives the book its great worth is that which deals with research methodology.

Salter's criticism of present-day methodology has all the objectivity that is characteristic of a true scientist. The reader will particularly appreciate the mastery with which the Pearsonian concepts of science have been dissected and the skill with which their deficiencies have been sorted out.

The author's familiarity with the literature on research methods and the inspiration which he draws from John Dewey's philosophy enables him to formulate a more adequate scientific procedure. The essence of this procedure is a greater reliance on logical analysis of a problem and advisability of deductive and qualitative analysis before classification and summarization of quantitative facts.

This study will probably mark the beginning of a transitional epoch in the field of social and economic research. Any research worker in economics or sociology and even in any other field of scientific activity will want to read Chapters I, III, IV, VIII and IX very thoroughly.

The other chapters deal more specifically with research in land economics in the United States. The author's experience and training and the enormous amount of preliminary work he did in the preparation of these chapters should have produced better results. An attempt to cover too wide a field in the compass of a few chapters has resulted in some sketchy appraisals and sweeping generalizations which mar this otherwise successful pioneering attempt at appraising research work in land economics.

JOHNSON, D. GALE. *Forward Prices for Agriculture*. Chicago, Ill., The University of Chicago Press. 1947. pp. xi + 259; 14 chapters.

Gale Johnson is a member of the Economics Department of the University of Chicago and a product of the "Ames School" during the days when T. W. Schultz was head of the Department of Economics at Iowa State College. Schultz began his advocacy of forward prices back in 1940.

In the words of the author, "This book is concerned with the development of a long-run policy for agriculture . . . In this book we have explored the advantages and disadvantages of forward prices . . . Our contribution to this

discussion has been to explore the analytical foundations of forward prices, since these foundations have not been exhaustively investigated previously. The analytical foundations have been examined in terms of the implications of reducing the impact of uncertainty upon the farm as a firm and upon the American economy as a whole."

The contents of this book are indicated by such chapter headings as: The Goals of Agricultural Price Policy; Uncertainty and Resource Use; Farm Size, Risk Aversion, and Capital Rationing; Expected and Realized Prices in Agriculture; Contribution of Price Policy to Resource Problem; Theory and Practice of Storage; Forward Prices for One Production Period; Long-Run Income Certainty and Stability; Forward Prices and the Reduction of Uncertainty.

SHARP, PAUL F. *The Agrarian Revolt in Western Canada*. Minneapolis, The University of Minnesota Press, 1948 pp. ix + 204.

This book is another contribution to the growing total of literature on agriculture on the Canadian prairies. It is an historical outline of the dynamic role played by prairie farmers in the political life of Canada and the Canadian west, and covers, in the main, the period between 1900 and 1926. Mr. Sharp traces the growth and decline of the different farm movements on the prairies, and, as the author puts it, "analyzes the close relationship of the western Canadian farmers' movements to similar organizations in the contiguous wheat belt of the American Northwest".

The title of the book and some of the chapter headings have a touch of the sensational, and in some parts of the book the breezy style gets the better of the author. However, the student of the farm movements on the Canadian prairies will find this book a good source of information. There is also an excellent bibliography.

KELLY, TRUMAN LEE. *The Kelley Statistical Tables, Revised 1948*. Cambridge, Mass., Harvard University Press. 1948. pp. 223.

The author has provided in this volume detailed 8-place tables of the normal distribution together with interpolation coefficients which enable the ready use of tables with a precision approximating the maximum precision inherent in the tabled entries. He has also provided tables and transformation equations which enable the use of the tabled normal distribution to evaluate the areas in distributions of Students' t , Fisher's z , Pearson's Chi squared, and the variance ratio F . His 8-place general utility tables do not duplicate operations which may be handled readily on a calculating machine.

The introductory section covers the use of the tables and the formulae upon which they are based. Examples of their use are given.

NOTES

Trade union membership in Canada at the end of 1947 reached the highest figure recorded by the Department of Labour since 1911.

According to figures appearing in the Department of Labour's *Thirty-seventh Annual Report on Labour Organization in Canada*, the total membership at the end of the year was 912,124 as compared to 831,697 at the end of 1946, representing an increase of almost ten per cent for the year.

The Canadian Government completed arrangements for the purchase of 15 million pounds of butter from Denmark, Australia, and New Zealand. This quantity is expected to take care of the minimum requirements during the seasonal shortage in Canada. The total quantity is to be delivered to Canada by the end of January. Of the approximately 15 million pounds, some 11,000,000 will come from Denmark and 2,000,000 each from Australia and New Zealand.

The imported butter will sell at Canadian price ceilings already established in various zones across Canada by W.P.T.B. order A-2515 as recently amended.

The Canadian Commercial Corporation, the agency through which the butter is being purchased, will make all sales to the wholesale trade under the direction of the Wartime Prices and Trade Board.

Domestic sales of new farm implements and machinery, mainly at wholesale prices, amounted to \$120,649,687 in 1947, an increase of 48 per cent over the revised estimate of \$81,698,185 for 1946. These figures do not include repair parts, for which separate figures are shown, nor sales of binder twine, motor trucks, or used equipment of any kind.

Supplementary figures giving the average mark-up as shown by the reporting firms indicated that the sales figure quoted above at wholesale prices should be increased by 21.5 per cent to bring it to a retail value. The estimated amount spent by farmers on new farm implements and machinery, therefore, for the year 1947 was approximately \$146,589,000.

Sales of repair parts (at wholesale prices) in 1947 amounted to \$22,880,134, an increase of 10 per cent over the \$20,827,005 reported for the year 1946. Applying an average mark-up of 31.3 per cent to bring this figure to retail prices, it would appear that Canadian farmers spent approximately \$30,041,600 on repair parts in 1947.

Estimates of the numbers of live stock on farms in Canada at June 1 this year indicate a decrease for each of the principal kinds of farm animals as compared with the numbers at June 1 last year, according to results of the June survey by the Dominion Bureau of Statistics.

Cattle numbers at 9,470,300 declined 2.6 per cent from June 1 last year. There was, however, no significant change in the number of cows and heifers two years old and over kept mainly for milking purposes. Slight increases in Quebec, Ontario and Alberta were almost completely offset by decreases in other provinces.

Hogs, as reported in the Bureau's press release of September 15, estimated at 4,463,100, were 18.5 per cent below last year. The number of horses on farms decreased 6.3 per cent from last year and at a total of 1,904,900 has now fallen below 2,000,000 for the first time since 1906. Sheep numbers decreased substantially to 2,250,800, almost 17 per cent below last year.

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THE
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Vol. 19, 1949

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Minister of Agriculture

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A REVIEW OF AGRICULTURAL BUSINESS
ISSUED BI-MONTHLY BY THE ECONOMICS DIVISION
MARKETING SERVICE
DEPARTMENT OF AGRICULTURE, OTTAWA

Published by Authority of the Right Hon. James G. Gardiner, Minister of Agriculture

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ECONOMICS DIVISION, MARKETING SERVICE
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ANNUAL AND MONTHLY INDEX NUMBERS

WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year	Wholesale Prices 1935-39=100			Farm Prices of Agricultural Products 1935-39=100	Commodities and Services used by Farmers(a) 1935-39=100		Cost of living 1935-39=100	
	Farm Products	Field Products	Animal Products		Equip- ment and Materials	Eleven Factor Index	Farm Living Costs(a)	Urban Living Costs
	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1913.....					85.4		80.1	79.1
1914.....					90.2	85.3	82.3	79.7
1915.....					96.9	91.6	86.5	80.7
1916.....					101.7	100.5	93.7	87.0
1917.....					140.7	140.5	111.5	102.4
1918.....					164.1	160.2	131.1	115.6
1919.....					169.1	167.9	143.0	126.5
1920.....					190.1	186.5	171.3	145.4
1921.....					147.4	152.5	139.9	129.9
1922.....					124.6	134.1	127.9	120.4
1923.....					118.3	130.6	128.3	120.7
1924.....					122.3	131.9	125.5	118.8
1925.....					123.2	131.8	123.9	119.8
1926.....	144.4	158.5	130.2		119.9	130.6	121.1	121.8
1927.....	138.6	149.4	127.8		119.9	131.2	119.8	119.9
1928.....	136.3	134.3	138.2		118.3	129.3	118.5	120.5
1929.....	140.8	137.2	144.4		117.6	127.9	117.3	121.7
1930.....	119.5	105.8	133.3		105.6	117.0	113.7	120.8
1931.....	78.9	65.0	92.7		92.2	100.9	103.9	109.1
1932.....	65.5	60.4	70.5		89.3	93.3	97.8	99.0
1933.....	69.3	69.3	69.2		88.8	89.8	95.8	94.4
1934.....	83.5	80.5	86.5		96.8	95.5	97.9	95.6
1935.....	89.2	84.4	94.1	88.0	95.6	95.4	97.9	96.2
1936.....	97.9	102.2	93.7	96.9	98.7	98.1	98.3	98.1
1937.....	117.4	128.9	106.0	119.7	108.4	105.3	102.9	101.2
1938.....	102.9	100.9	104.8	105.0	101.2	101.7	101.9	102.2
1939.....	92.6	83.7	101.5	91.8	95.7	99.3	99.5	101.5
1940.....	96.1	85.4	106.7	96.8	101.8	106.8	108.5	105.6
1941.....	106.6	88.9	124.4	110.2	107.8	116.1	114.1	111.7
1942.....	127.1	109.7	144.6	133.1	119.2	131.6	119.0	117.0
1943.....	145.4	129.0	161.8	157.8	122.4	143.4	121.7	118.4
1944.....	155.3	144.5	166.1	172.3	126.0	148.0	122.8	118.9
1945.....	162.8	155.4	170.2	180.7	125.9	152.1	123.2	119.5
1946.....	171.0	160.9	181.2	192.5	128.0	157.0	127.1	123.6
1947.....	183.5	166.8	200.2	203.8	139.5	169.3	138.3	135.5
1948								
Jan.....	212.3	185.7	238.8	231.9	169.8	187.6	155.3	148.3
Feb.....	210.1	181.8	238.4	231.7				150.1
Mar.....	211.0	181.1	240.9	231.5				150.8
Apr.....	215.7	185.9	245.5	234.0	172.9	196.2	163.7	151.6
May.....	222.0	192.9	251.2	238.8				153.3
June.....	232.7	200.4	265.1	248.8				154.3
July.....	233.7	197.0	270.4	250.5				156.9
Aug.....	232.2	178.7	285.8	256.0	177.0	202.3	169.5	157.5
Sept.....	230.2	172.6	287.9	253.2				158.9
Oct.....	226.7	172.4	280.9	252.1				159.6
Nov.....	226.5	174.6	278.4	250.1				159.6
Dec.....	227.6	174.7	280.4	251.6				158.9

(a) Revised July, 1948 by The Dominion Bureau of Statistics.

(b) Canada. Dominion Bureau of Statistics, Prices Branch. *Prices and Price Indexes*. (Mimeo). Ottawa, Monthly. Wholesale prices of products of Canadian farms.

(c) Ibid (b). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid (b). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agricultural Division. *Index Numbers of Farm Prices of Agricultural Products*. (Mimeo). Ottawa, Monthly.(f) Canada. Dominion Bureau of Statistics, Prices Branch. *Price Index Numbers of Commodities and Services Used by Farmers*. (Mimeo). Ottawa, Jan., Apr. and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) *Price Index Numbers of Commodities and Services Used by Farmers*. Includes food, clothing, fuel, household equipment, health, maintenance and miscellaneous.(i) *Prices and Price Indexes*. Includes food, rent, fuel and lighting, clothing, home furnishings and services, miscellaneous and retail prices of commodities.

ECONOMIC SITUATION

The year 1948 is noted for many new records. The gross national product at market prices will reach an all-time high of more than \$15 billion. The investment boom in Canada has continued at a high level during 1948. Expenditures on capital goods, including housing, is estimated at approximately three billion dollars, the highest private and public investment outlay in the history of Canada. The disposable income, or what is left of personal income after personal direct taxes are deducted, will also be at a record high level. The total employed labour force in September, 1948, was the highest reported and numbered 5,042,000.

A review of current 1948 production and export data reveal the following interesting information:

Industrial Production.—The seasonally adjusted index of the physical volume of production (1935-1939=100) stood at 187.5 in October 1948, the highest mark reached since the year 1945. The September 1948 figure was 184.1 and that of October 1947, 179.2. The mining index advanced. Total mineral production of Canada, it is estimated, reached an all-time high value in 1948, with values of main classes of minerals also at record levels. According to the preliminary estimate of the Dominion Bureau of Statistics, the year's output amounted in value to \$806,200,000, up 25 per cent above the previous record of \$644,700,000 in 1947. Most of the gain was due to increased prices, but quantities were also generally larger.

The index of physical volume of production of non-durable manufactures rose two points between September and October and the figure for durable manufactures slightly over seven points. In the non-durable group significant declines in the volume of production were recorded in foods and beverages, including both meat and dairy products, and tobacco products; while gains were shown for paper products and those manufactured from petroleum and coal. In the durables group, wood products declined while iron and steel products output advanced sharply. Electrical apparatus production increased to some extent. The index of electric power production declined from 171.2 in September to 165.4 in October.

It is interesting to note that for the vitally important commodity steel, Canada's output of steel ingots for the month of October 1948, amounted to 272,127 tons compared with 247,171 tons for the same month of 1947. Production for the first ten months of this year amounted to 2,550,228 tons compared with 2,366,682 tons produced during the same period last year. It appears that Canada will for the first time produce in a single calendar year more than three million tons of steel ingots.

Exports.—Canada's export trade is expanding due to greatly enlarged shipments to the United States, its value so far this year being far in excess of any previously recorded except in wartime. The value of merchandise shipped abroad in November was \$293,900,000, only slightly under the peacetime high total of \$307,000,000 registered in October, and \$40,800,000 higher than in November, 1947.

The aggregate for the 11 months ending November 1948, rose to \$2,759,000,000, an increase of \$250,300,000 over the same period of last year, and only \$15,900,000 under the total for the full year 1947.

The growth in Canada's exports to the United States has been the outstanding feature of the year's trade. In November shipments to that country reached

an all-time record value of \$163,893,000, almost 77 per cent higher than in the corresponding month last year. This brought the cumulative total for the 11 months ending November to a new high figure of \$1,353,740,000 as compared with \$928,255,000 in the same period last year. On the other hand imports from the United States were reduced by about 10 per cent during the first 10 months of 1948. This decrease is in the main due to the import restrictions program.

Exports to the United Kingdom were again lower in November, being valued at \$56,670,000 as compared with \$69,254,000 in the same month last year, while the aggregate for the 11 months of this year was \$638,400,000 compared with \$678,657,000 in the same period of 1947.

The increased trade with the United States has resulted in an improved United States dollar position. The Minister of Finance in a speech in Edmonton on January 5, 1949, indicated that at December 31, Canada's official holdings of gold and United States dollar exchange had reached \$998 million. This figure compares with the low point of \$461 million on December 17, 1947. The December 1948 figure includes the sum of \$150 million, which is the proceeds of the long-term loan sold to three American life insurance companies last August. This leaves a net increase in reserves of United States dollars of \$387 million.

The Minister of Finance also pointed out that cattle and beef together accounted for an inflow of no less than \$67 million of United States exchange during the first 10 months and it is estimated that for the full year this figure will exceed \$100 million.

Prices.—The general wholesale price index number continued to rise during the first 11 months of 1948. In November it was approaching the 1920 record of 212·8 (1935-39=100). On the other hand, farm product prices at the wholesale and farm levels showed declines in September and October. This was mainly due to lower farm prices for grains and some livestock products and to a decrease in wholesale prices of livestock, eggs, potatoes and onions.

Cost of Living.—The urban cost of living index (1935-39=100) also reached a new peak of 159·6 in the month of October 1948. It remained unchanged in November and showed in December 1948 the first decline of any consequence since September 1945.

The fall in the cost of living index at December 1, 1948, was due to a drop in the foods index, all other group indexes being fractionally higher or unchanged. An unusually sharp decrease in the price of eggs and moderate reductions in meats, vegetables and fruits sent the food index down from 204·7 to 202·0 between November 1 and December 1. In the previous month the food index had declined from 205·4 at October 1, making a two-months' decline of 3·4 points.

Outlook.—The overall demand in 1949 is expected to equal, or possibly exceed, that of 1948 although there may be a softening in the export demand for some farm products. Domestic economic activity should continue at the 1948 level. Disposable income available to consumers will probably exceed the total for 1948, and there will be more domestic consumers. The domestic demand for farm products will equal, or likely exceed that of 1948. Prices received by farmers will likely remain at the 1948 level or perhaps decline slightly toward the end of 1949, while prices paid by farmers will remain at the 1948 level or show some increase.

THE EUROPEAN RECOVERY PROGRAM AND CANADIAN AGRICULTURE**A. E. RICHARDS**

In a speech at Harvard University on June 5, 1947, Secretary of State George C. Marshall offered assistance from the United States Government if the countries of Europe would do something to help themselves on the way to recovery. Immediate action followed. The United Kingdom and France invited all other European countries to attend a conference for the purpose of creating a program for the economic recovery of Europe. The nations attending the conference included Austria, Belgium, Denmark, France, Greece, Iceland, Ireland, Italy, Luxemburg, the Netherlands, Norway, Portugal, Sweden, Switzerland, Turkey and the United Kingdom. From July to September 1947 the sixteen countries working together as a Committee of European Economic Co-operation (CEEC) produced a survey of their requirements and prospects of co-operative effort in a recovery program. On September 22, 1947, this report, known as the Paris Report, was presented to Mr. Marshall.

Intensive work in Washington and Europe followed the delivery of this report. In Washington legislation was prepared for submission to Congress which resulted in the Foreign Assistance Act of April 3, 1948. Under this Act approximately 5 billion dollars was made available by Congress for foreign aid. The Act outlined the nature and method of assistance to Europe and authorized an appropriation for a fifteen-month period with power to the President to approve that the amount be expended in twelve months. To administer the program of assistance the Act established the Economic Co-operation Administration (ECA), headed by an Administrator.

In Europe the sixteen countries emerged from the committee stage and on April 16, 1948, set up the Organization for European Economic Co-operation (OEEC). The Convention for the Organization contains the obligations of Members, outlines the functions and powers of the Organization, provides for the setting up of a Council and Executive Committee, the appointment of a Secretary-General and the accession of new members.

Division of ECA Funds and Procurement Authorizations.—Following the principles of self help participating European countries were required to divide up among themselves the total funds made available and to submit the result to the Administrator. When the participating countries were confronted with this task it seemed impossible of achievement for the total estimate of need greatly exceeded the dollars available. However, with understanding, patience and compromise the job was completed and each country knew how much of the 4,875 million dollars for ERP or "Marshall Plan" aid was its share. The United Kingdom allotment for the year 1948-49 amounts to \$1,263 million, France \$989 million and Denmark \$110 million.

With this definite knowledge of individual allotment it is in the interest of each country to use its share of United States dollars to best advantage. Markets are sought where goods can be bought most cheaply and purchases are confined to essentials.

OEEC countries make up a list of their requirements and indicate the source of supply. This source may be such countries as the United States, Canada, Brazil, one of the participating European countries or any country in the world which supports the program and meets ECA conditions. Items to be purchased must come within the limits of an approved import program before any procurement can be undertaken. Programs prepared by each of the participating countries are screened by the OEEC in Paris before being submitted

to ECA officials in Washington for review and financial approval. When ECA finances the procurement of goods outside the boundaries of the United States it is referred to as an "offshore" purchase. Concurrently, supplying countries, after taking care of traditional markets outside Europe, make up a list of estimates of products in surplus supply which can be made available to the OEEC countries. The exchange of lists assists in matching supplies against requirements.

Canadian Estimates of Available Supplies and ECA Authorizations.—

The Canadian estimates of surplus commodities which could be made available for sale to OEEC countries are submitted by various government departments to the Canadian ERP Supplies Committee in Ottawa. They are then consolidated and forwarded to ECA at Washington and to Canadian Trade Commissioners in Western Europe. The Department of Agriculture and the Department of Trade and Commerce are responsible for estimating the availability of agricultural products. This is done on a quarterly and annual basis.

The estimate of quantities and value of Canadian commodities available to ERP countries contains practically all farm products expected to be in surplus supply. The current list contains 42 farm commodity items ranging from wheat to dried apples. Commodities under contract or destined to traditional markets in ERP countries or their overseas dependencies are shown on the list for ECA financing but are indicated as programmed to specific countries. This applies to bacon under contract to the United Kingdom which could not be made available to another country.

For the year July 1, 1948, to June 30, 1949, Canada submitted an export list of commodities valued at \$1.4 billion which could be made available to ERP countries. Of this, \$850 million or 60 per cent comprises agricultural products.

From April 3, 1948, the starting date of the program, to December 31, 1948, authorizations by ECA for procurement in Canada totalled \$592,753,276. Of this total, \$357,734,172 or 66 per cent is for agricultural items. Over and above Canada's total authorization there is a general list with Canada and the United States shown as optional sources of supply. United States dollars provided under this heading amount to \$10,318,048 with over 95 per cent allotted to agricultural commodities. It is reasonable to assume that a good proportion of this will be allocated to Canada.

The following is a résumé of the total ECA authorizations as of December 31, 1948.

Total Authorizations:

Commodities	\$ 3,881,848,228	
Ocean Freight	347,630,260	
		\$ 4,229,478,488
Total offshore authorizations.....		1,499,840,931
Total Canadian authorizations.....		592,753,276
Canadian percentage of total offshore authorizations....		39 per cent
Canadian percentage of total authorizations.....		15 per cent

Patterns of Trade.—The participating countries under OEEC select the commodities for ECA financing which they consider will contribute most to their recovery. They can also name the country in which they wish to make dollar purchases to be financed by ECA funds. Because dollars are scarce, and limited to a definite allocation, Western Europe will only purchase absolute necessities, not obtainable elsewhere, from the United States, Canada and other countries in the dollar area.

In the early months of the Recovery Program, Western European supplies of food and agricultural products were critically short. In May, 1948, they accounted for 70 per cent of the total imports authorized under ECA. The good crops harvested in 1948 in Europe and increasing livestock production have reduced the need for the purchase of food in such volume from the Western Hemisphere. In the closing months of 1948 ECA shipments began to reflect the shift from food to recovery goods. Orders for machinery and construction materials to rehabilitate plant and equipment have increased. In November 1948 industrial goods made up 67 per cent of total authorizations. In the program for 1948-49 food and agricultural products make up 44 per cent of the anticipated imports from the Western Hemisphere.

Conditions and Division of Aid.—To ensure that available aid was distributed in the most efficient way the Council of OEEC laid down certain principles to guide the Organization in its task. These principles include:

- (1) Except where justified by hardship, consumption of foodstuffs for human needs and of finished and semi-finished consumer goods should in no country be raised to a level higher than that of 1947;
- (2) The Organization should encourage the development of intra-European trade and in particular ensure that commodities which are available outside the dollar area are not imported from the Western Hemisphere;
- (3) It should further encourage imports of capital goods whose utilization will result in the production of goods contributing to the earning or saving of dollars.

The United Kingdom as a member of OEEC has subscribed to these principles. In turning to Denmark for food and agricultural products and using ECA dollars to purchase capital goods for industrial expansion Britain is complying with the master plan. The resulting pinching-off process of Western Hemisphere food supplies is of great concern to Canadian farmers. However unpleasant the immediate effects may be for Canadian agriculture the merits of the program must be judged on a long term basis.

In their fight for recovery Western European countries are accepting a minimum standard of food consumption for they realize that production goods and equipment are essential to ultimate viability. Increased industrial production will swing the emphasis from a dollar saving to a dollar earning program.

Trade Balances and Bilateral Agreements.—In the present world situation of inconvertible currencies nations do not regard an export surplus as a favourable development. It is spendthrift economy to continue to export more goods than are imported unless the nation can afford to extend credit or give the goods away. Happily for the world the United States is in a position to maintain a huge export surplus and underwrite a part of the export surpluses of other countries without seriously endangering its own domestic economy.

To protect themselves against unfavourable trade balances which result from either export or import surpluses the countries of Western Europe have entered into a series of bilateral trade agreements. Under such agreements the values of imports balance exports. It is to be hoped that this bilateral agreement system of trading is a temporary expedient. Since October 1948 the intra-European Payments Scheme has been operating as a part of the European Recovery Program. This scheme provides for the multilateral use of currencies in offsetting trade deficits and credits among OEEC countries as far as present circumstances will permit. It is a first step towards the free convertibility of currencies. Its objective is to remove the need for bilateral trade pacts and to facilitate the return to a multilateral system of trade.

The Surplus Problem.—In order to protect the United States economy ECA has certain responsibilities. It is directed under the Agricultural Assistance Act to assist in the disposal of surplus agricultural products. Accordingly when the Secretary of Agriculture declares an agricultural product to be surplus to domestic needs ECA dollars cannot be used to finance the purchase of that commodity outside of the United States. Commodities which at December 31, 1948 were in this category included: oats, cotton, tobacco, peanuts, dried eggs, flax fibre, turpentine, beans, linseed oil, all oilcake meals, prunes, potatoes, wool and flaxseed.

Since a number of these commodities such as eggs, dried beans, flaxseed and linseed oil and meal are in surplus supply in Canada problems are created for the Canadian producer. The United Kingdom is using some of her earned dollars to purchase a limited quantity of eggs, but after the surplus declaration ERP countries were not prepared to increase their dollar deficit by direct purchases of beans and flaxseed in any considerable volume.

Breakdown of ECA Authorizations for Procurement of Agricultural Products in Canada, by Countries, April 3 to December 31, 1948

Country	Commodities	Total Value
		\$
Austria.....	Rye, rapeseed, linseed oil, cake or meal, miscellaneous fats and oils, hides, skins and leather.....	7,504,871
Belgium.....	Wheat, barley.....	2,763,385
Bizone Germany.....	Miscellaneous oils and fats, oilcake and meal, hides, skins and leather.....	2,631,000
Denmark.....	Barley, oilcake and meal, miscellaneous seeds.....	2,617,076
France.....	Flaxseed, linseed cake or meal, oilcake and meal, hog liver, miscellaneous seeds.....	3,284,196
Greece.....	Hides, skins and leather.....	110,000
Iceland.....	Mixed bread grains, coarse grains (unspecified), miscellaneous seeds.....	279,000
Ireland.....	Wheat, coarse grains (unspecified), linseed cake or meal, fruits and vegetables, miscellaneous seeds.....	2,919,125
Italy.....	Wheat.....	3,890,000
Netherlands.....	Wheat, flaxseed, linseed oil, cake or meal, hides, skins and leather, lacithin (soya), miscellaneous seeds.....	12,693,731
Norway.....	Wheat, rye, coarse grains (unspecified), barley.....	4,408,419
United Kingdom.....	Wheat, wheat flour, meat, including bacon, cheese, hides, skins and leather.....	314,633,369
	TOTAL.....	357,734,172

Counterpart Funds.—It should be understood that ECA is not a relief agency. Individuals in the participating countries of Western Europe are not getting something for nothing. The goods enter commercial channels of trade and the importer and the consumer pay for them in their own currency at competitive prices. The ERP country receiving commodities financed by grants must deposit an equivalent amount of local currency to be used at the discretion of that country and the Administrator of ECA. These local currency funds or counterpart funds as they are called are used to further the purpose of the recovery program. They may be used with the approval of ECA for development projects such as the construction of a hydro electric plant or a transportation system. In this way ECA funds are performing a double duty in speeding up the recovery of Western Europe.

The Distribution Division of the Food and Agriculture Organization provides staff for the International Emergency Food Committee in its task of studying commodity situations and food needs, and recommending international allocation of scarce foodstuffs and nitrogen fertilizers. As allocations work becomes less necessary, the Division plans increasingly to take up longer-term commodity problem studies. Its work also includes gathering, analyzing, and publishing statistics of various commodities and working with commodity study groups and advisory committees.

SEASONAL VARIATION OF PRICES OF CATTLE AND DRESSED BEEF

F. M. SCHRADER

Cattle are normally marketed in largest numbers during the autumn months. At this time prices are the lowest of the year. As the volume of marketings declines to the low point in June, prices rise so that peak cattle prices usually occur during June. Then as marketings increase during the late summer and autumn months, prices decline until the low point of heavy marketings occurs again. This pattern of monthly price movements occurs each year.

Prices of most agricultural products follow a well defined pattern of variation within a year. This seasonal variation results from the dependence of agricultural production on weather and climatic conditions. Most products are produced in greatest volume during the summer months and are marketed in greatest volume during the autumn and early winter months. Market prices usually vary inversely with the supply offered on the markets.

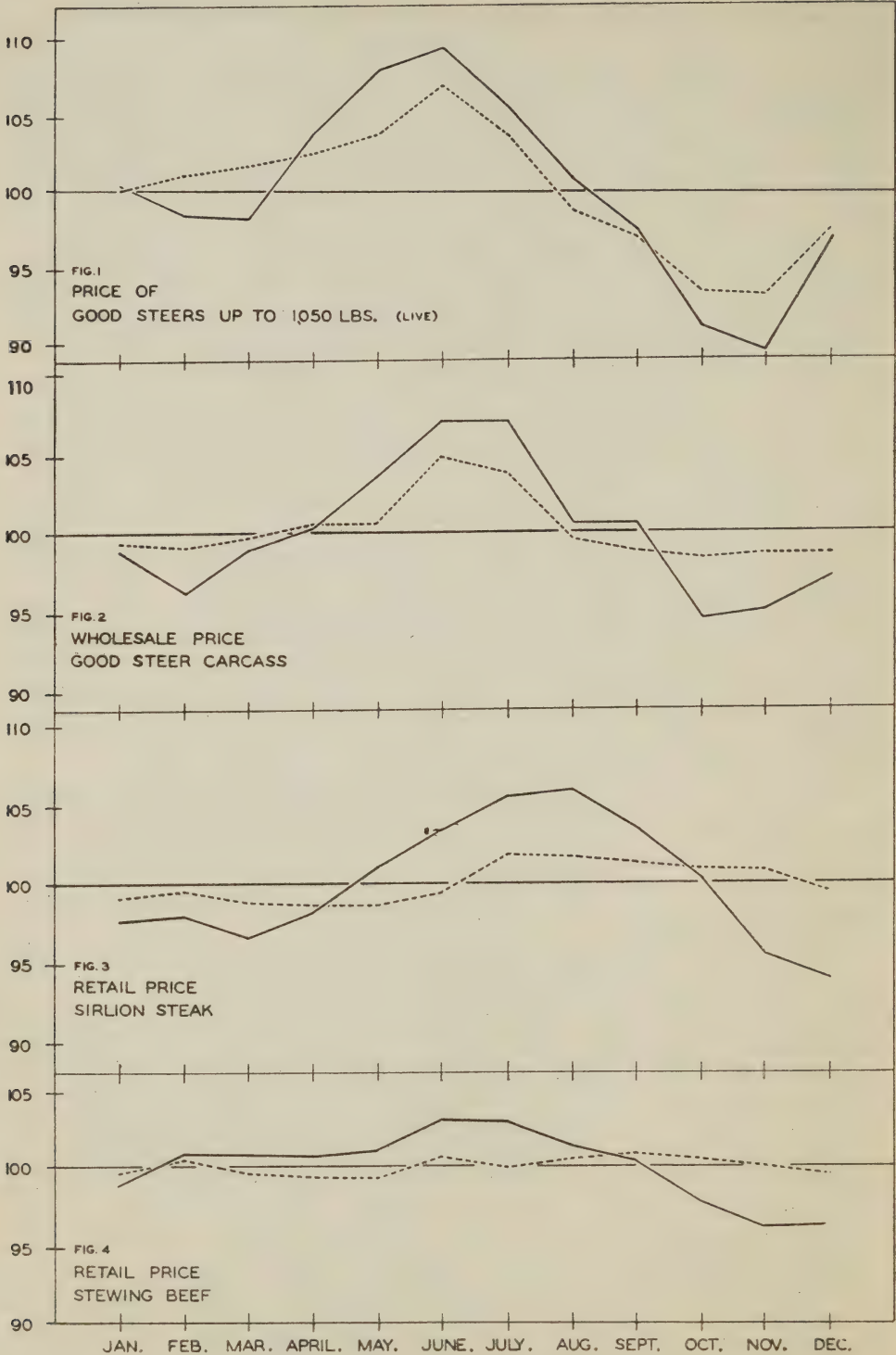
These seasonal movements of production and price do not always occur at exactly the same time of the year. Other factors such as weather or general business conditions may have important effects on the seasonal movement of production and price in any one year. The seasonal movement for any given year is known as a specific seasonal. An average of a number of specific seasonals is known as a typical seasonal variation. A typical seasonal variation index shows the manner in which production or price has varied in the past and it may be used as an indication of future movements.

In Figure 1 the index of average monthly price movements of live steers at Toronto during the period 1921 to 1940 is shown by the solid line. The seasonal variation in prices of live cattle during the years 1940-46 (dotted line) were reduced. This was in the main due to two factors: first, government wholesale and retail price control measures, and second, long term export contracts. This changed seasonal pattern may or may not continue in the future, depending on the nature of production and marketing policies.

The index of seasonal variation of wholesale prices of good steer carcasses at Toronto (Figure 2) follows the same general pattern as that of live steers. However, the prices in the summer months were not as high nor were the prices in the autumn as low. This narrower range of variation is due partly to processors' fixed charges being included in the price, and partly to the alternatives available to the seller.

Thus when cattle are ready for market the farmer has little or no alternative but to sell at going market prices. Holding in anticipation of improved prices involves loss in finish and added feed costs. It is usually advantageous to sell at the current market price. This results in relatively wide seasonal fluctuations in prices. Wholesale butchers, on the other hand, are able to hold carcasses for a longer time than a farmer can hold finished cattle. Fresh beef carcasses can be held in coolers for several weeks without deterioration of quality. They may be frozen, held for several months, and then enter the frozen meat trade. A second alternative is using carcasses for manufactured products, in which case they can be held for a much longer period of time. This combination of alternative uses of carcasses permits holding of product and results in less month to month variation in prices.

Monthly retail prices move in well defined patterns which are similar to those of prices of live cattle and of wholesale carcasses. Sirloin steak has been chosen to represent the relatively choice high-priced portions of the carcass and stewing beef has been chosen to represent the lower-quality, lower-priced portions of the carcass.



SEASONAL VARIATION OF PRICES OF CATTLE AND DRESSED BEEF

The index of seasonal variation of sirloin steak (Figure 3) reveals the same general pattern but varies within a narrower range than prices of live steers and wholesale carcasses. Additional fixed charges included in its price are largely responsible for the reduction in variation. On the other hand, the extent of variation in the price of this cut is due to the "luxury" nature of the cut and the alternative forms in which it may be sold.

Retail prices for stewing beef show relatively small variations from month to month (Figure 4) as compared with the products mentioned above. The difference in seasonal variation between prices of sirloin steak and stewing beef may be explained by differences in the cuts from the point of view of quantity and quality. Stewing beef makes up a larger proportion of beef carcass and is of low quality as compared with sirloin steak.

These indexes of seasonal variation are averages of 28 specific seasonal patterns. The process of obtaining a single pattern to represent a larger number removes the variations among specific seasonals. Much of the value of a typical seasonal variation index is lost when changes in the specific seasonal patterns occur gradually over the years. These trends in seasonal variation of cattle and beef prices will be examined in an article appearing in a later issue of this publication.

APPENDIX

The indexes of seasonal variation described in this paper were calculated by the ratio to moving average method. A twelve-month moving average of the basic data was computed and centred. This approximates the trend-cycle curve. The basic data for each month was then divided by the corresponding centred moving average. The seasonal and erratic influences were the main factor left in the resulting ratios. The ratios for each month were then arranged in arrays and truncated arithmetic means were calculated. This step eliminates from the ratios the influence of erratic factors and any error which may have persisted because of the failure of the twelve-month moving average to accomplish its purpose. The final step was to make the total of the twelve-monthly means equal 1,200, or make the average of the ratios equal 100. To accomplish this, each mean was divided by the average of the twelve means. The result is the seasonal index as plotted in Figures 1 to 4.

The use of commercial fertilizers in Canada has shown marked expansion in the last 20 years, the rise being almost entirely due to a sharply increased consumption of mixtures for general and special purposes. Fertilizer materials, at the same time, have been shipped abroad in substantial volume during recent years.

Combined sales of fertilizer materials and mixtures for consumption in Canada amounted to 672,000 tons during the 12 months ending June 30, 1948—highest in the record—as compared with 661,000 in the preceding 12-month period, and close to four times the sales registered in 1927.

The Nutrition Division of the Food and Agriculture Organization is concerned at present with helping nutrition workers do a better job by supplying basic information or standards in food and nutrition, and with helping governments to expand and improve their work in nutrition, by furnishing guidance for investigations and practical projects. To these ends, the Division plans studies on such subjects as supplementary feeding, food composition, nutrition education, and technology in handling and processing food. Work begun by the nutrition conferences of 1948 in Latin America and the Far East also will be followed up, and a training course will be organized for nutrition workers in the Near East.

The Rural Welfare Division of the Food and Agriculture Organization will emphasize extension work, which is fundamental to agricultural improvement all over the world. A training school in extension methods is planned in 1949, either in Latin America or the Near East. The Division also is making studies of many of the most significant projects now being carried on to advance rural welfare, with the idea that these might be examples that could be adapted and followed elsewhere.

BETTER FARM MANAGEMENT PRACTICES THROUGH DEMONSTRATION**A. GOSSELIN AND D. FORTIN**

The effectiveness of practical demonstration as a means of inducing farmers to follow new farming methods or to use new techniques or cultural practices which have been tested on experimental farms, or which have been applied by progressive farmers on their own initiative, has been recognized a long time ago by Canadian agricultural leaders.

To facilitate this practical application of research, in 1915 a Division of Illustration Stations was added to the Dominion Experimental Farms System established in 1886. Today the Experimental Farms System comprises the Central Farm, 27 branch farms or stations, 18 sub-stations, 54 district experimental sub-stations and 154 illustration stations throughout Canada.

There are now 44 Dominion illustration stations in the Province of Quebec. At first these stations were organized as follows: a certain portion of the farm of an interested farmer was rented and laid out into fields of about $2\frac{1}{2}$ acres so that a systematic rotation of crops, using suitable seed and judicious cultural and fertilization methods, might be followed. Then the attention of neighbours in the community was directed to this illustration station in the hope that they might emulate the work being done there. This part of the farm was under the direction of a field supervisor from the Division of Illustration Stations.¹ In 1936 the small-fields system was modified and the whole farm was used as an illustration station under the supervision of that Division.

The Order of Agricultural Merit Competitions.—Under Canada's Constitution education in general comes under provincial authority. Each province is, therefore, responsible for its own agricultural education and extension work.

The first provincial organization set up in Quebec to serve as a demonstration of better-farming was the *Order of Agricultural Merit* created in 1889 by the Quebec Government. It was probably the first master-farmers organization in North America. To that end the province was divided in five regions and a competition was in turn held every five years in each region. There are three classes of competitions conducted by the *Order of Agricultural Merit*: one for the Gold Medal, one for the Silver Medal and one for the Bronze Medal. Each year there is only one competitor in the professional farmers class who is awarded the title of laureate of the gold medal and Commander of the *Order of Agricultural Merit*. There may be several laureates of the silver and bronze medals.

During the summer a jury of 4 members, including the secretary, visits the farm of each competitor in the three classes of competitions. The progress of each competitor is assessed by the jury and out of a total of 1,000 points a score is allowed to various departments of the farm. In recent years the number of competitors participating in these competitions varies from 125 to 250 according to the region. A lengthy report is published each year giving a summary of the farm business of each competitor.

The annual reports of the *Order of Agricultural Merit* published since its foundation constitute a valuable record of the results obtained by the best farmers of the province of Quebec during that long period of time. It would be quite interesting to study these reports and compare the results secured by the best farmers 55 years ago with the results obtained by the best farmers today.

Acknowledgment. This study was made with the co-operation of the Quebec Department of Agriculture through Mr. Nazaire Parent, supervisor of this work, who furnished the information relative to better-farming competitions since their inception.

¹ There is a considerable amount of experimental work included so that these stations are now really quite as much a sub-station undertaking experimental work on some important local problem as a purely illustration station.

This would show the progress accomplished after many years of more scientific farming. One thing is certain, however, the recipe for better farming has remained somewhat the same, as may be seen by the answer of Charles Champagne, the first laureate of the Gold Medal and the First Commander of the Order of Agricultural Merit in 1890, to the judges of the competition who asked him how he did it. "Industry, care of everything, economy, avoid extravagance, improve and enrich a field every year, seed it to grass as soon as possible, keep it in hay as long as it yields good crops, then pasture."

When it is known that this 250-acre farm bought in 1855 by Mr. Champagne was so poor and so stony that the former owner preferred to raise his crops half share on his neighbour's farm rather than on his own; that after 35 years he had succeeded in making it one of the most productive farms in that area; that this farm bought on credit for \$5,284 had all been paid for several years prior to the competitions; that in 1889 farm receipts amounted to \$5,468, farm expenses (including \$355 household expenses) amounted to \$2,062, leaving a net farm income of \$3,406, it may be said that Mr. Champagne's recipe for good farming was really good.

Quebec Demonstration Farms System.—In 1920, realizing that it was somewhat difficult for the average farmer to evolve and apply a comprehensive system of farming to his own farm based on what was done on the Dominion Experimental Farms, the Quebec Government established a provincial demonstration farms system. On these farms the best known farming methods were to be applied under the close supervision of the Department of Agriculture: adequate land drainage, a suitable crop rotation, a sound program of livestock breeding and production, milk production control, and the keeping of a double-entry farm accounts book in which is recorded the necessary data concerning the farm business and family living. This book is collected by the Department of Agriculture and checked every year.

To ensure full application of the directives of the Department it was necessary that the government officials in charge of that work have a certain supervisory control over the operation of these farms. To that effect a five-year contract was made with the operator of the farm selected—usually one in each county. The Government paid rent to the farm owner and subsidies for the purchase of chemical fertilizer, lime and grass seed and for the keeping of a good bull or ram. After 1938 the total amount paid was limited to a maximum of \$500 for each farm in any one year of the contract. In addition the operator benefited from whatever returns resulted from efficient farm management.

This policy proved very effective. In most cases the output and net returns of these farms increased quite materially during the five-year period they were under the Department of Agriculture supervision, and thereafter. Most of the 81 demonstration farms established under this policy between 1921 and 1940 entered the Agricultural Merit competitions; 10 of the demonstration farms' operators were awarded the gold medal and 53 the silver medal.

After 1940 the only demonstration farms organized under the initial policy of 1921 were farms operated by religious and orphan institutions. In 1948 there were seven such farms operating under the supervision of the Quebec Department of Agriculture.

Better-Farming Competitions.—In 1928, nine years after the inception of the demonstration farms policy, the Quebec Government decided to extend in a modified form this program of farm management work to as many districts of the province as possible, and to make it the basis of the agricultural extension work carried out by the Department of Agriculture.

On the whole there is very little difference in the set-up of demonstration farms and better-farming competitions save that the latter is less costly to the government and, therefore, makes it possible to include more farmers.

Organization of Better-Farming Competitions.—A few months prior to the organization of a competition in a county or section of a county, a certain amount of preliminary work is done by the "county agronomist" (county agent) for the selection of 25 to 35 farmers who want to participate and agree to follow the regulations set up in a five-year agreement. Once this is done each farm selected is surveyed and divided into fields on which a crop rotation suitable to the type of farming, kind of soil, and farm labour available, is agreed upon. A complete farm inventory is taken and recorded in the farm accounts book they are required to keep during the five-year agreement. In short, a five-year plan is outlined for each farm as a whole unit, including both plant and animal production, for the purpose of increasing its productivity and maintaining it at a high level. This is the key to the efficiency of any farming enterprise.

Farmers benefit from better-farming competitions by getting higher returns following the improvement of their farm business with the free supervision or technical assistance of government officials in charge of that work. However, to induce competitors to do their best and to keep their farm accounts book properly for five consecutive years, the Department of Agriculture pays an annual allowance of \$20 to every competitor who has 65 per cent of the total score used to assess his progress.

After the completion of the competition, the annual score of each competitor is added up and the \$1,000 prize money is distributed to the 20 first competitors according to their merit. The first award is \$100, the second \$90 and down the list in a decreasing order of \$5. The nineteenth and twentieth awards amount to \$15 each.

The accounting system consists of three books condensed in one; the Inventory, Cash and Journal-Ledger. Cash operations, both farm and personal as well as non-cash, crops fed to livestock or farm produce used in the home are recorded in this book. At the end of the year these books are forwarded to the Department officials. A summary of the farm business is worked out, a copy of which is sent back to each competitor with his book. This system provides both the farmer and the Department of Agriculture with very useful data; the farmer knows of his progress and the Government has a good picture of the farmers' business in various regions of the province from year to year.

The progress report of better-farming competitions in the Province of Quebec for the past 20 years given in Table 1 shows that the main objective of this policy—a greater farm efficiency—initiated in 1928, has been attained. These 5,000 farms (3.2 per cent of all Quebec farms) scattered throughout

Table 1.—Development and Progress of Better-Farming Competitions in the Province of Quebec, 1928-1948

Number of competitions organized from 1928 to 1948.....	173
Number of farms included in these competitions.....	4,998
Average initial number of farms per competition.....	29
Number of competitions completed up to 1948.....	142
Initial number of farms in these competitions.....	4,114
Number of farms participating for five years.....	3,509
Percentage of farms participating for five years.....	85.3
Number of individual records collected from 1928-1948.....	19,056
Number of competitions organized from 1945 to 1948.....	31
Initial number of farms included in these competitions.....	884
Number of farms which have participated in all competitions, expressed as a percentage of the 155,000 farms in the province of Quebec (a).....	3.2

(a) 1941 Census.

various districts of the province on which the best known methods of farming at present are applied by progressive practical farmers, provide a good test of the value of this policy.

Although a certain number of competitors do not carry on for the full five-year agreement, this does not mean that they do not continue to apply in a certain measure the system outlined for their farm at the beginning. The main reason why some farmers drop from the competition after one, two, three or four years is that they do not keep their farm accounts regularly. This is a requisite of the agreement with the Department of Agriculture.

While on the whole these competitions serve their purpose and have a good influence on other farmers in a given area, it is somewhat difficult to appraise and measure exactly the beneficial effects and the farmers' progress due to these competitions, on account of the many variable factors—climatic and economic—involved in the operation of a farm from one year to another and from one period of years to another. Climatic conditions, for example, affect crop yields and in turn, farm income. So with economic conditions; yields may be good but if prices of farm products are low the farmers' income will not be much higher than when yields are low and prices high. Again, when both yields and prices are low the farmer who has participated in a better-farming competition might make a lower farm income than he had before he improved his methods. This, of course, is quite relative for had a farmer not made his farm business more efficient he would be worse off.

One of the difficulties in assessing the progress accomplished by a farmer or a group of farmers who participated in a better-farming competition is due to the short duration of these competitions. For, on a general farm or a mixed farm where dairying is the main enterprise, it takes at least five years to complete the first cycle of a crop rotation and to appraise the value of a modified soil management method. Thus the effectiveness of a system of farming on a given farm cannot be accurately measured only by the comparison of the results obtained the fifth year of a competition with those obtained the first year. To have a better picture of the situation it is necessary to compare the average output of a farm during the whole five-year period of the competition with the average output for a subsequent five-year period. In the past, however, this has not been done and after a competition is over the Quebec Department of Agriculture does not collect these statistical data on account of the great amount of work involved.

To secure the information necessary for assessing the farmers' progress resulting from these competitions, a farm management study of a representative sample of the farms which participated in such competitions several years ago, is being conducted by the Economics Division of the Dominion Department of Agriculture in various regions of the province. Such a study was made in two regions during the summer of 1948.

Measures of Farmers' Efficiency and Progress.—Of the various means of assessing farmers' efficiency and progress, the most commonly used are farm returns and farm output. In this study, the assessment of farm efficiency made on the basis of money profits has several limitations for the analysis of individual farm operations for both the five-year period of the competition and for a subsequent period of years on account of climatic and economic variations. However, when a large number of farms is studied (Table 2), the average results obtained under different sets of conditions at different periods of time are reasonably accurate.

A more direct and simpler means of assessing farm efficiency is the farm output. For example, the quantity of produce—crop and livestock produce—obtained from a given farm or from an acre of land. Other measures of output efficiency such as crop yields, acres of land per animal unit, number of cows per farm and yield of milk per cow and per acre of land may also supplement other methods of measuring farmers' progress.

Farm Business Summary of 49 Competitions.—The analysis of the yearly farm business of all farmers who participated in the 49 competitions held from 1929 to 1942 is given in Table 2. The figures in each column represent the

Table 2.—Summary of Farm Business, Averages of 49 Farm Competitions, 1929-42

Item	1st Year	2nd Year	3rd Year	4th Year	5th Year	Five year Average
Number of farms.....	1,158	1,116	1,138	1,109	1,003	1,105
Number of competitions.....	48	48	49	49	47	48
Tillable acres per farm.....	82.0	81.5	83.6	80.2	81.0	81.1
	\$	\$	\$	\$	\$	\$
Total investment at the beginning of the year.....	9,500.77	9,599.35	9,703.08	9,943.59	10,338.46	9,803.37
Total investment at the end of the year.....	9,619.54	9,803.44	9,777.62	10,231.55	10,739.40	10,015.46
Cash farm receipts.....	1,513.52	1,605.34	1,653.92	1,819.31	2,129.47	1,734.22
Cash farm expenses.....	860.84	976.26	1,001.35	1,042.84	1,196.98	1,010.69
Cash farm income.....	652.68	629.08	652.57	776.47	932.49	723.53
Inventory changes.....	118.77	204.09	74.54	287.96	400.94	212.09
Net farm income.....	771.45	833.17	727.11	1,064.43	1,333.43	935.62
Interest (5%).....	478.01	485.07	487.02	504.38	526.95	495.47
Family labour income ^a	293.44	348.10	240.09	560.05	806.48	440.15
Farm products consumed by livestock.....	889.18	819.15	889.76	978.85	1,011.08	915.30
Farm products used in the home..	279.26	257.26	279.44	307.42	317.54	287.46
Non-farm cash receipts ^b	119.35	125.42	128.10	120.70	124.78	123.64
Family living expenses.....	420.32	437.42	428.77	444.47	453.91	436.46

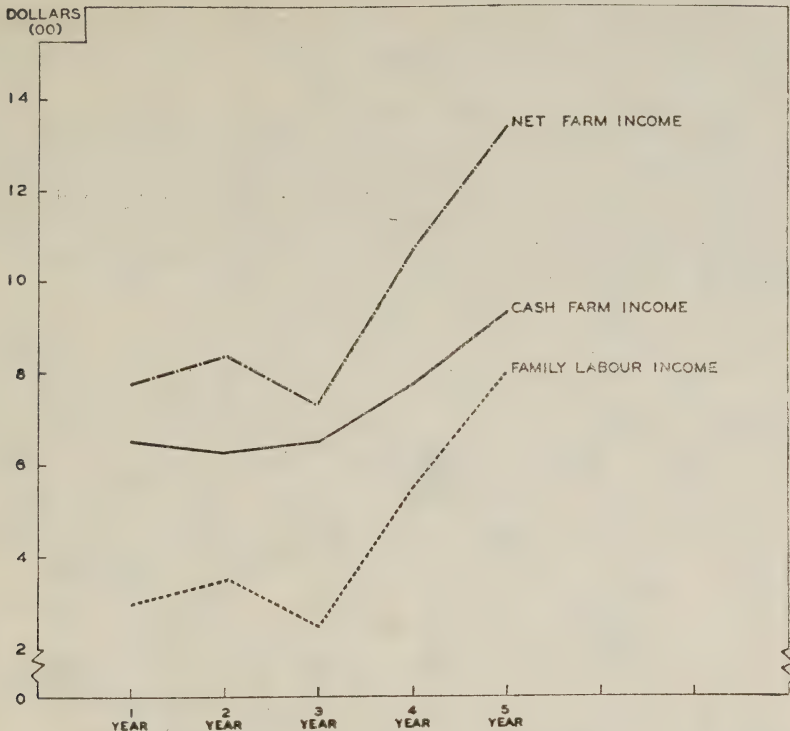
^a The value of unpaid family labour is not included in farm expenses.

^b Includes a part of labour off the farm and various sundry receipts.

average farm business of all competitors for any given year of the five-year period, regardless of the time these competitions were held. These figures show the financial changes which occurred in the farm business during those five years. Except for the 16 competitions organized from 1929 to 1932 inclusive, it may be noted that the bulk of these competitions (33) was initiated after the low peak of the economic depression in the thirties. From 1933 to 1942 there was a slow but gradual increase in farm income throughout the country. Therefore, the higher farm returns secured during the fourth and fifth year of these competitions, as shown in Table 2, are not due entirely to a greater farm efficiency but also to increasing prices for farm products.

The slight drop in net farm income and family labour income in the third year of these competitions is due to larger capital expenditures and current expenses required at the beginning to make the farm business more efficient. The beneficial effects of better farm management expressed in terms of net farm income become noticeable only after three or four years.

In any case, any farmer who participated in these competitions has a fair idea of the changes which occurred in his farm business. He knows fairly well



Net farm income, cash farm income and family labour income, averages of 49 competitions, 1929-1942.

whether his farm is more productive and has a greater carrying capacity, whether his cows produce more milk and finally whether his income has increased.

DAIRY FACTORIES IN EASTERN ONTARIO AND SOUTHERN QUEBEC¹

W. C. SHIPLEY

Eastern Ontario and southern Quebec are two of the main dairy regions in Canada. In the year 1946, 707 of the 2,163 dairy factories in the Dominion were located in these two regions. Of the nearly 4 billion pounds of milk delivered to dairy factories throughout Canada in 1946, 1.4 billion pounds, or 35 per cent of the total amount delivered, arrived at plants in these two regions. In the same year, almost 27 million pounds of butterfat, or 13 per cent of the total delivered to all Canadian creameries was received by factories in these areas.

Description of Area.—The counties included in eastern Ontario were Leeds, Lanark, Grenville, Carleton, Dundas, Stormont, Glengarry, Russell and Prescott. In these nine counties there are almost 23 thousand of the 178 thousand farms in Ontario. For purposes of this article, the southern part of Quebec is considered as being bounded on the east by the counties of Nicolet, Arthabaska, Wolfe and Compton and on the south by the United States border and the St. Lawrence River. In addition, the counties of Vaudreuil, Soulanges, Argen-

¹ Sources of statistical data:

Canada—Dept. of Trade and Commerce, Dominion Bureau of Statistics:

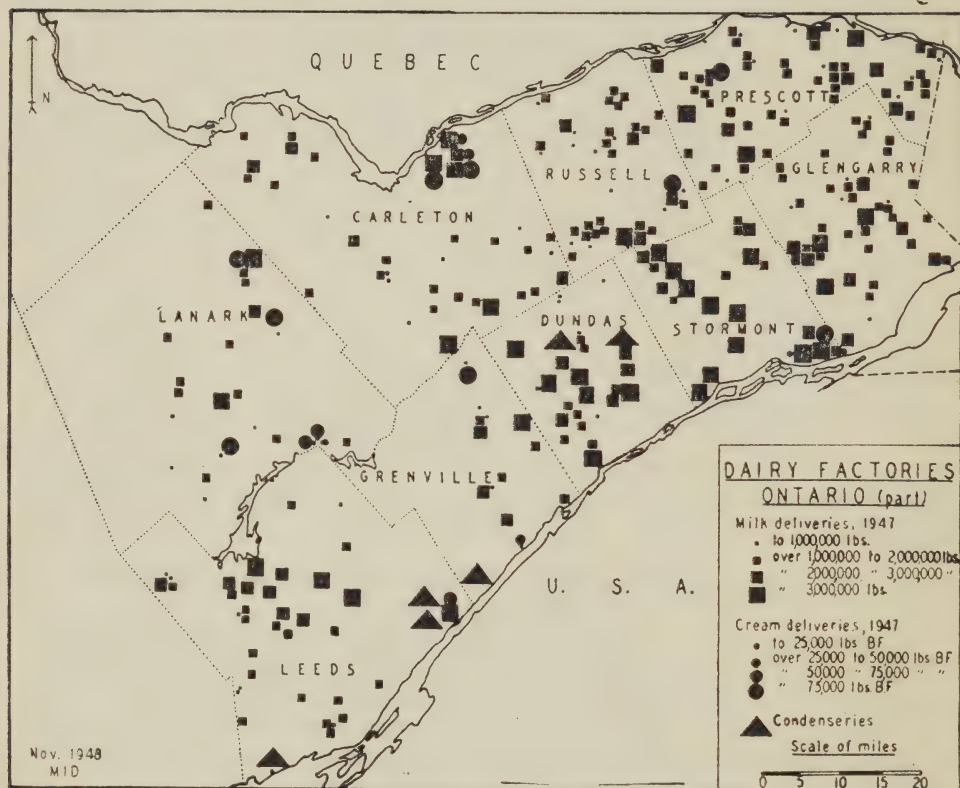
(a) Statistics of Dairy Factories 1946. Ottawa, The King's Printer, 1948;

(b) Trade of Canada, Vol. I, Table 12 in each issue, 1922-23, 1930 and 1933. Ottawa, The King's Printer;

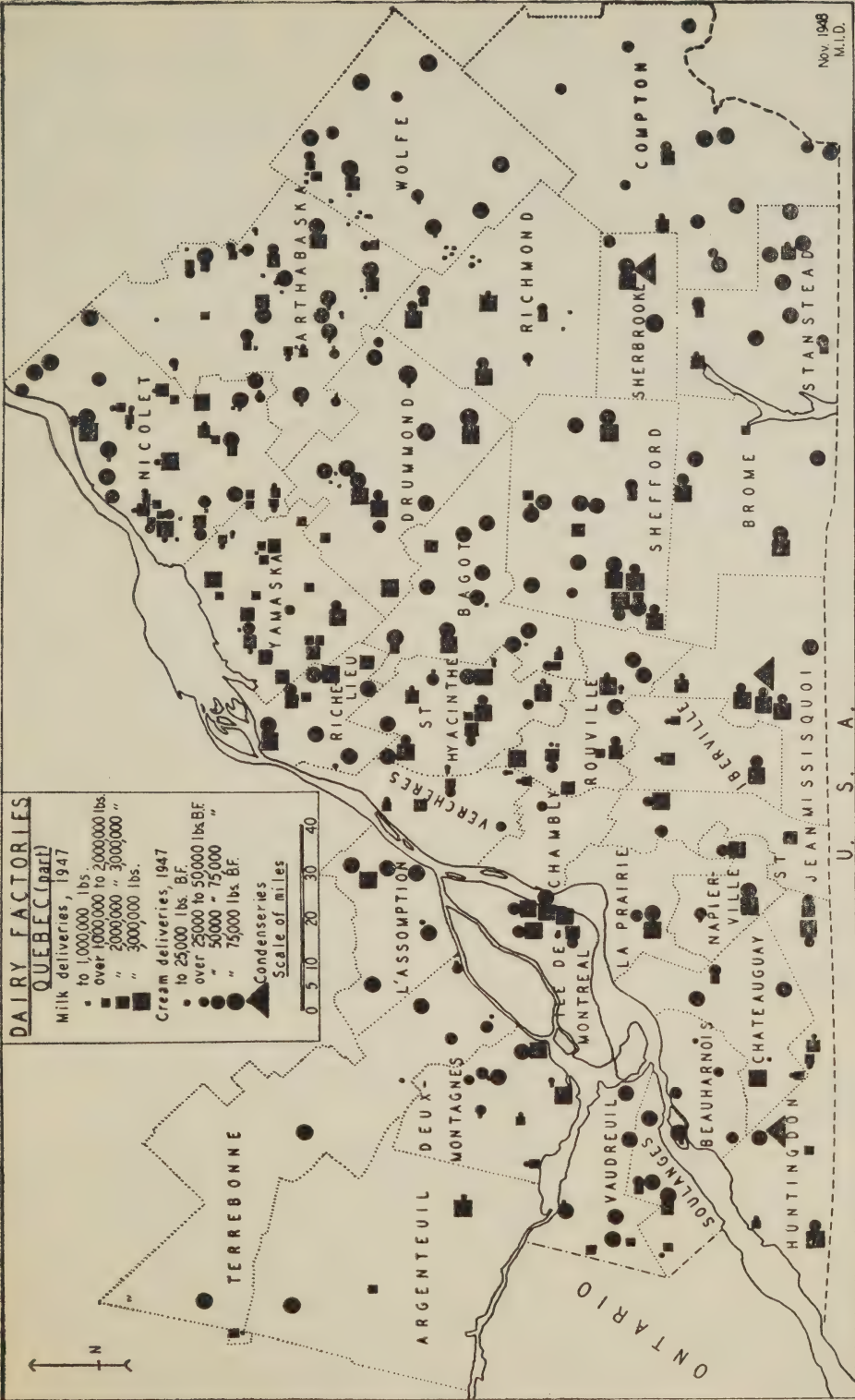
(c) Census of Canada, 1941, Vol. VIII, Pt. I and II (Agriculture). Ottawa, The King's Printer.

teuil, Deux-Montagnes, Terrebonne and L'Assomption, as well as Montreal Island were included. About 53 thousand of the 155 thousand farms in Quebec are located in this area.

These two regions are naturally suited for dairy production. In eastern Ontario, the land is rolling and there is good pasture for dairy cattle. Conditions are favourable for growing coarse grains and silage to include in the dairy ration in winter months. The soil, climate and topography of the Quebec area make it a hay and pasture region. South of the St. Lawrence River, particularly in the counties of Stanstead, Brome, Shefford and Richmond, the land is hilly and farming conditions are best suited for dairy farming.



History.—Dairying in these two areas is not a recent development. Their natural resources have prompted the pursuit of this industry down through the years. In 1864, shortly after the establishment of the first Canadian cheese factory in Oxford County in western Ontario, a cheese factory was built at Athens, in Leeds County. In 1865, a cheese factory was opened at Dunham, Missisquoi County, Quebec, and in 1873, Athelstan, in Huntingdon County, became the site of the first butter factory in Canada. Butter and cheese production tended to shift to the more outlying areas as population increased, industry expanded and the demand for fluid milk became greater. These new developments, together with improvements in refrigeration and transportation led to a wider distribution of fluid milk and cream. The eastern United States market, adjacent to these dairy regions in Ontario and Quebec, provided an outlet for milk and cream supplies as well as for some butter and cheese.



There are no data covering exports to the United States from the specific areas being considered. However, because of their role in the dairy industry and their proximity to the United States market, it seems reasonable to assume that they contributed a major share of these exports. The effects of the United Kingdom demand the United States tariff policy and the exchange rate fluctuations are reflected in the variation in amounts exported between 1920 and 1930.

Butter exports from Canada to the United States declined from 10,693,311 pounds in 1920 to 20,700 pounds in 1930. In 1920, cheese exports to the United States amounted to 6,031,404 pounds. With the depression in the British cheese market in 1927, exports to the United States rose to 14,062,000 pounds but decreased to less than one-half this amount within the next three years. Exports of cream increased from 795,780 gallons in 1920 to 4,495,917 gallons in 1927 but dropped to about one-half this quantity by 1930. Fluid milk exports amounted to 1,985,113 gallons in 1920 and increased to 4,886,445 gallons in 1927, after which a decline took place. As supplies of milk and cream from the United States producers increased and sanitary regulations became stricter, exports to the United States began to dwindle. In 1930, when the Smoot-Hawley Tariff was imposed upon dairy products, exports to the United States practically ceased. The Tariff amounted to 14 cents per pound on butter, seven cents per pound on cheese, 56·6 cents per gallon on cream and 6·5 cents per gallon on milk, virtually prohibitive rates in each case. With this outlet for their fluid milk and cream gone, the producers in eastern Ontario and Quebec diverted their milk and cream supplies into the production of butter and cheese with the emphasis on cheese.

In 1948, by the General Agreement on Tariffs and Trade, concluded at Geneva, United States tariff rates were reduced from the 1938 Trade Agreement levels. The tariff quota on whole milk remains at 3 million gallons but the rate of duty on this amount is reduced from 3·25 cents per gallon to 2 cents per gallon. When the quota is filled, the duty rate of 6·5 cents per gallon applies. The tariff quota on cream continues at 1·5 million gallons but the rate of duty on this quota is reduced from 28·3 cents per gallon to 20 cents per gallon. Any quantity of cream above the quota is still subject to the duty of 56·6 cents per gallon. The rate of duty on cheddar cheese is reduced from 4 cents per pound with a minimum of 25 per cent ad valorem to 3·5 cents per pound and not less than 17·5 per cent ad valorem. The rate of duty on butter is reduced to 7 cents per pound on butter up to 50 million pounds imported between November 1 and March 31 of the following year. At present, because of Canadian commitments to the United Kingdom, and domestic requirements, there are export restrictions on the shipment of dairy products to the United States.

Location of Plants.—From the information obtained from individual dairy factory reports for 1947, two maps have been prepared (Figures 1 and 2).¹ They show the location of the various cheese factories, creameries, combined factories and condenseries.

Size of Plants.—The plants in these eastern Ontario and southern Quebec regions have been grouped on the basis of milk and/or cream deliveries. Since there are only a few condenseries in each area, they have been located with no attempt made to indicate their size. In these two adjoining areas which could be considered as one, 69 per cent of the plants reporting milk deliveries in 1947 handled less than two million pounds and only 16 per cent handled over three million. Forty-one per cent of the plants reporting cream deliveries received less than 50 thousand pounds of butterfat while 44 per cent received over 75 thousand pounds.

¹ The maps were prepared by Miss M. I. Dunbabin, Economics Division, Dominion Department of Agriculture.

REVIEW OF LITERATURE

Smith, R. Elberton.—*Customs Valuation in the United States.* Chicago, University of Chicago Press. 1948. pp. XV + 380.

Much has been and is being written about trade policies. Since 1945 many international conferences have discussed ways and means of reducing tariff barriers. Progress has been made in this direction at Geneva and Havana. But little has been written about the administration of tariffs. The importance of customs valuations and its influence upon international trade has been recognized by Dr. Smith.

This book deals with the problem of valuing imports into the United States for duty purposes. It is divided into four parts—an introduction, an historical section, a section on contemporary valuation law and problems, and a summary and conclusion which contains some very interesting suggestions for custom valuation reform in the United States. There is also an excellent bibliography.

From the Canadian exporter's point of view Part III is most important—a listing of some of the chapter headings indicates the breadth of coverage. These are: *Foreign and Export Value—United States Value; Cost of Production—American Valuation; Domestic Value and American Selling Price—Dumping and Currency Concession in Relation to Valuation—Methods of Valuation in Foreign Countries.*

In the chapter entitled *Methods of Valuation in Foreign Countries* Dr. Smith outlines the procedure of customs valuation in Canada. He points out the similarity to the United States system, "The Canadian system is based upon foreign valuation and contains numerous procedural and organizational features common to those of the United States either in the past or in the present."

Proceedings of the International Conference of Agricultural Economists, Sixth Conference, 1947. London, England, Oxford University Press. 1948, pp. XII + 508.

The sixth International Conference of Agricultural Economists met at Dartington Hall, England, during the two weeks August 20 to September 6, 1947. The results of this international seminar have been published recently.

This is the first Conference since 1938 when the Canadians were hosts at Macdonald College in the Province of Quebec. In the years between 1938 and 1947 the agricultural economists have found themselves participating actively in the formulation and application of policy. At this conference these men were given the opportunity of exchanging experiences and opinions.

The President in his opening address to the Conference said:

The outstanding problem of the modern world, and, by implication, one that is peculiarly that of the economist, is the devising of a sufficiently wise and efficient allocation of world resources to satisfy the legitimate material needs and preferences of the greater number of people. The social implications, therefore, of the economist's task are daily becoming more and more apparent.

In our program for this Conference we have tried to face up to the implications of the new world around us. Our main subjects for discussion raise fundamental issues. They are not new. We were discussing many of them at our Conferences between 1929 and 1939. But as practical problems they have become more acute than ever, and demand immediate attention.

The Conference dealt with five major themes. These were:

1. The Movement of Farm Population.
2. The Flexibility of Land Tenure, Capital, and Credit Systems to meet Technical, Economic and Social Developments.
3. The Effectiveness of Market Mechanism for Adjusting Farming to Public Need.
4. The Place of State Buying and Selling in Free World Trading.
5. The Human Satisfaction of Rural Work and Rural Living.

In addition, there were three papers covering:

1. The Application of Scientific Management to Agriculture.
2. Work Simplification in Agriculture.
3. The Conflict of Public and Private Interest in Land Use.

Space limitations prevent an adequate review of the papers given. The Proceedings, as published, however, should prove to be a valuable source of information to agricultural economists in Canada as well as abroad. Readers who are interested in foreign agriculture will find the papers on India, the United States, France, Great Britain, Switzerland, the British West Indies and the United Netherlands informative, although in some cases behind the times.

Mr. Coke, a member of the Economics Division, Dominion Department of Agriculture, and a member of Canada's small delegation, gave a paper entitled *Measures for Increasing Stability of Agricultural Production, Prices and Income in Canada*.

CANADIAN MANUFACTURING INDUSTRIES BY TYPE OF ORGANIZATION

Out of 30,663 manufacturing establishments operating in Canada in 1946, nearly 48 per cent were under individual ownership and almost exactly one-third were incorporated companies, according to a special study by the Dominion Bureau of Statistics. Partnerships accounted for 16 per cent of the total and co-operatives for just over three per cent.

Incorporated companies are by a very wide margin the most important in the employment field. These establishments accounted for 86.5 per cent of the employees, while those operated under individual ownership provided employment for only 7.9 per cent of all employees. Partnerships accounted for 4.7 per cent of the employees, and co-operatives for the remaining 0.9 per cent.

Among Canada's 40 leading industries, the production of pulp and paper, the manufacture of automobiles, railway rolling stock, and primary iron and steel, distilling, and non-ferrous smelting and refining, were entirely under incorporated companies. Incorporated companies also accounted for over 90 per cent of the employment in slaughtering and meat-packing, electrical apparatus and supplies, petroleum products, rubber goods, machinery, sheet metal products, cotton yarn and cloth, breweries, biscuits, iron castings, tobacco, paper boxes and bags, hardware, brass and copper, medicinals and pharmaceuticals, and silk and artificial silk goods.

Among the co-operatives, those engaged in the manufacture of butter and cheese accounted for 24.4 per cent of the employees in this industry, while co-operatives in stock and poultry feeds accounted for 11.3 per cent of employees in the industry as a whole.

British Columbia and Ontario had the highest proportion of incorporated companies and Prince Edward Island the lowest. Individual ownership was most common in the Maritimes and least common in British Columbia. The proportion of partnerships was highest in British Columbia and lowest in New Brunswick, while Saskatchewan, Alberta, Quebec and Prince Edward Island had the highest proportions of co-operative ownership.

The seventh meeting of the International Conference of Agricultural Economists is to be held at Stresa on Lake Maggiore in northern Italy, August 21 to 28, 1949. Prior to the Conference a tour through some of the agricultural districts of Belgium, France and Switzerland is planned. Following the Conference a tour is to be arranged to Lombardy and the Pola Valley. Visits to Florence and Rome will be made later.

INDUSTRIAL DEVELOPMENT IN CANADA¹

There are now established in Canada some 2,000 American branch plants and their affiliated industries. About 50 per cent of these are manufacturing establishments, the remainder being engaged in finance, insurance, shipping and other services. The capital investment of these branch industries exceeds two billion dollars. Most of these were established to take advantage of the favourable export situation presented by British Empire preferences; to supply the Canada market, and in a few instances, to service the markets of other foreign countries. Although the advantages of Empire preferences have seriously diminished since 1941, due to currency and import restrictions, some American industrialists still cite these as their main reasons for establishing plants in Canada, while others are attracted by our stable labour conditions, cheap electric power, and plentiful raw materials.

There are more than 450 British subsidiary firms established in Canada, with a reported capital investment well over \$600 millions. A further 25 have established here during the past year [1948].

There are 75 or more "refugee" industries from European countries which have been located here, nearly all in the central provinces. These industries employ nearly 6,000 wage earners to produce goods valued close to \$50 millions yearly.

Over the present year [1949], it is expected that between 100 and 150 more new industries from abroad will be established in Canada. Probably about 60 per cent of these will be British, while 30 per cent of them will come from the United States, and the balance will migrate from foreign countries such as France, Belgium, Holland, Denmark and the Scandinavian countries. These plants will likely represent a capital investment of \$100 to \$150 millions and will employ anywhere from 10,000 to 20,000 persons.

Industries from the United States have little difficulty in a financial way in setting up branches in the Dominion. Most of them just bring machinery, United States dollars and in some instances also Canadian dollars which they may acquire in the free United States market for making investments in Canada. Purchasers of marketable stocks or shares in Canada may register them with Foreign Exchange control, and get a permit for withdrawal of proceeds in Canadian dollars. Sale of non-resident securities in Canada, however, is not allowed unless proceeds are reinvested in Canadian securities of like category. Such non-resident securities may be exported and their sale outside

Canada requires no permit. Foreign exchange is made available for remitting net current earnings of non-residents to the U.S.

There are a number of ways of financing open to British industries. An arrangement is now in effect with the British Treasury, whereby releases under the unpaid balance of our \$700 million loan to the United Kingdom in 1942, presently amounting to between \$200 and \$300 millions, may be used to help finance the moves; instead of applying them all to reducing the loan, Britain finds these Canadian dollars through the sale of Canadian securities held by her own nationals. As these accumulate they are drawn on for helping carefully selected industries desiring to migrate. A number of recent arrivals have been financed in this way, and it is anticipated that more will receive the same aid.

This year another potential method of financing British industries has been arranged through the proposed co-operation of Canadian insurance companies doing business in the United Kingdom. These companies would loan Canadian dollars to the industry desiring to move here or set up a branch. This loan would be a direct obligation on the new Canadian firm or subsidiary, and would be guaranteed by its parent company, through the deposit of suitable sterling securities with the affiliate of the Canadian insurance company in Britain. The attractiveness of this plan is that no dollar guarantee is required from the Bank of England. If a failure occurs, the sterling balance is absorbed as an addition to the capital structure of the branch or affiliate of the insurance company. One company has made its arrangements to provide such loans on approval from the Bank of England, and at least four others are now giving it consideration.

Besides these, assistance may be given through the sale of bond issues or junior securities in Canada by Canadian investment banking houses. Another method of assistance may be through Canada's *Industrial Development Bank*.

As yet foreign firms from European countries cannot receive help through the facilities open to British firms, through releases under the loan, or through the insurance companies. They are handicapped by lack of dollars and the reluctance of their governments to lose them. Their only recourse is to obtain dollars from associates or by liquidation of Canadian or United States securities by those associates. In some few cases they are able to obtain releases from their governments for the export of their own specialized machinery and equipment.

¹ Excerpts from a paper delivered by G. D. Mallory, Director of the Industrial Development Division, Department of Trade and Commerce on November 8, 1948.

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A REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION, MARKETING SERVICE
DEPARTMENT OF AGRICULTURE, OTTAWA

Published by Authority of the Right Honourable James G. Gardiner, Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS

WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year	Wholesale Prices 1935-39=100			Farm Prices of Agricultural Products 1935-39=100	Commodities and Services used by Farmers (a) 1935-39=100		Cost of Living 1935-39=100	
	Farm Products	Field Products	Animal Products		Equip- ment and Materials	Eleven Factor Index	Farm Living Costs (a)	Urban Living Costs
	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1913.....					85.4		80.1	79.1
1914.....					90.2	85.3	82.3	79.7
1915.....					96.9	91.6	86.5	80.7
1916.....					101.7	100.5	93.7	87.0
1917.....					140.7	140.5	111.5	102.4
1918.....					164.1	160.2	131.1	115.6
1919.....					169.1	167.9	143.0	126.5
1920.....					190.1	186.5	171.3	145.4
1921.....					147.4	152.5	139.9	129.9
1922.....					124.6	134.1	127.9	120.4
1923.....					118.3	130.6	128.3	120.7
1924.....					122.3	131.9	125.5	118.8
1925.....					123.2	131.8	123.9	119.8
1926.....	144.4	158.5	130.2		119.9	130.6	121.1	121.8
1927.....	138.6	149.4	127.8		119.9	131.2	119.8	119.9
1928.....	136.3	134.3	138.2		118.3	129.3	118.5	120.5
1929.....	140.8	137.2	144.4		117.6	127.9	117.3	121.7
1930.....	119.5	105.8	133.3		105.6	117.0	113.7	120.8
1931.....	78.9	65.0	92.7		92.2	100.9	103.9	109.1
1932.....	65.5	60.4	70.5		89.3	93.3	97.8	99.0
1933.....	69.3	69.3	69.2		88.8	89.8	95.8	94.4
1934.....	83.5	80.5	86.5		96.8	95.5	97.9	95.6
1935.....	89.2	84.4	94.1	88.0	95.6	95.4	97.9	96.2
1936.....	97.9	102.2	93.7	96.9	98.7	98.1	98.3	98.1
1937.....	117.4	128.9	106.0	119.7	108.4	105.3	102.9	101.2
1938.....	102.9	100.9	104.8	105.0	101.2	101.7	101.9	102.2
1939.....	92.6	83.7	101.5	91.8	95.7	99.3	99.5	101.5
1940.....	96.1	85.4	106.7	96.8	101.8	106.8	108.5	105.6
1941.....	106.6	88.9	124.4	110.2	107.8	116.1	114.1	111.7
1942.....	127.1	109.7	144.6	133.1	119.2	131.6	119.0	117.0
1943.....	145.4	129.0	161.8	157.8	122.4	143.4	121.7	118.4
1944.....	155.3	144.5	166.1	172.3	126.0	148.0	122.8	118.9
1945.....	162.8	155.4	170.2	184.1	125.9	152.1	123.2	119.5
1946.....	171.0	160.9	181.2	200.6	128.0	157.0	127.1	123.6
1947.....	183.5	166.8	200.2	212.4	139.5	170.4	138.3	135.5
1948.....	229.4	195.1	263.7	252.5	173.1	196.9	162.8	155.0
1948								
Mar.....	211.0	181.1	240.9	240.1				150.8
Apr.....	215.7	185.9	245.5	242.7	172.9	197.8	163.7	151.6
May.....	222.0	192.9	251.2	247.5				153.3
June.....	232.7	200.4	265.1	257.5				154.3
July.....	233.7	197.0	270.4	259.2				156.9
Aug.....	232.2	178.7	285.8	264.1	176.7	203.7	169.5	157.5
Sept.....	230.2	172.6	287.9	261.3				158.9
Oct.....	226.7	172.4	280.9	260.2				159.6
Nov.....	226.5	174.6	278.4	257.6				159.6
Dec.....	227.6	174.7	280.4	259.4				158.9
1949								
Jan.....	226.2	175.7	276.7	257.2	180.3	198.3	171.8	159.6
Feb.....	226.2	186.1	266.3	252.5				159.5

(a) Revised July, 1948 by The Dominion Bureau of Statistics.

(b) Canada. Dominion Bureau of Statistics, Prices Branch. *Prices and Price Indexes*. (Mimeo). Ottawa, Monthly. Wholesale prices of products of Canadian farms.

(c) Ibid (b). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid (b). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agricultural Division. *Index Numbers of Farm Prices of Agricultural Products*. (Mimeo). Ottawa, Monthly.(f) Canada. Dominion Bureau of Statistics, Prices Branch. *Price Index Numbers of Commodities and Services Used by Farmers*. (Mimeo). Ottawa, Jan. Apr. and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) *Price Index Numbers of Commodities and Services Used by Farmers*. Includes food, clothing, fuel, household equipment, health, maintenance and miscellaneous.(i) *Prices and Price Indexes*. Includes food, rent, fuel and lighting, clothing, home furnishings and services, miscellaneous and retail prices of commodities.

ECONOMIC SITUATION

The investment program for 1949 will approximate \$3.3 billion. This estimate¹ made by the Department of Trade and Commerce represents capital expenditures by business enterprises, including agriculture, institutions and governments, as well as outlays for housing. These expenditures, if realized, would involve an increase of about eight per cent over that spent in 1948. Prices of investment goods may be about seven per cent higher on the average in 1949 than in 1948. Therefore, the physical volume of investment in 1949 will exceed very slightly the 1948 level.

According to this report, capital outlays will be substantially greater for institutions and some utilities groups, moderately higher for housing and agriculture, roughly unchanged for commercial undertakings and mining, and lower for manufacturing, forestry and the construction industry. Capital expenditures made directly by Dominion, provincial and municipal governments are expected to be moderately higher.

With respect to realization of intentions in 1949, the report indicates that physical limitations to the achievement of the investment programs should be of lesser importance. On the other hand, the report warns "that less firmness should be attached to the present forecast than in any previous post-war year". The reasons given for this qualification are that for the first time since the war a decline in the physical volume of investment in the business sector of the economy is indicated. Backlogs of investment requirements, though still in existence, have been narrowed to fewer fields.

In addition to outlay for new investment, the report estimates that there are repair and maintenance expenditures expected of approximately \$1.5 billion representing an increase of four per cent over 1948.

In discussing the economic significance of the forecast, the report states ". . . the inflationary influences that have arisen in recent years as a result of the expansion, relatively, of investment requirements should tend to subside in 1949. Nevertheless the maintenance of real investment at the unusually high level achieved in 1948 will be an important sustaining influence in the economy throughout the coming year".

Output.—The gross national product for 1948 is valued at \$15.4 billion as compared with \$13.4 billion in 1947 and \$11.9 billion in 1946. After adjusting the dollar value of the gross national product for changes in price it was found that there was a small gain in the physical volume of production.

Over-all physical volume of production of goods and services, according to Bank of Canada estimates, rose between three and four per cent over the year 1948. With crop conditions better in 1948 than in 1947, the physical volume of agriculture production increased by about four per cent. Industrial output was approximately 4.5 per cent higher in 1948 than in 1947. There was greater production in industries such as primary iron and steel, non-ferrous metals, oil and coal, building materials, farm implements, industrial machinery, and construction.

Income.—The net national income amounted to \$12.8 billion in 1948, and \$11.0 billion in 1947. Steady increase in the industrialization of Canada would tend, other things being equal, to reduce the portion of the national income earned by farm operators from farm production. However, as the Dominion Bureau of Statistics points out in its *Canadian Statistical Review*, February 1949,

¹Canada. Department of Trade and Commerce. *Private and Public Investment in Canada Outlook 1949*. Ottawa, 1949.

during the past few years a combination of rising volume of production and price increases has offset this trend and resulted in both relative and absolute increases. The net income of farm operators from farm production, including wheat participation payments, was \$1.7 billion or 13.6 per cent of the national income in 1948, and \$1.2 billion or 11.3 per cent in 1947. The rate of increase in net farm income in 1948 over 1947 was 41 per cent.

External Trade.—Canada's surplus in her current international transactions increased substantially during 1948. In terms of physical volume, exports were maintained while imports were reduced by about one-tenth. Export prices which are largely determined by conditions in the United States and overseas markets, averaged about 13 per cent higher in the latter part of 1948 than they had a year before. Because of higher prices, the total value of Canada's commodity trade with all countries during 1948 was \$5,747 million, the highest figure on record. The five-billion-dollar mark was passed in 1944 and again in 1947, but the upward trend was carried still further in 1948. While the value of Canadian exports, \$3,075.4 million, was exceeded in 1944 and 1945, that of Canadian imports rose to a new peak of \$2,636.9 million. Canada's favourable trade balance with all countries in 1948 amounted to \$473.1 million, double the 1947 figure of \$237.8 million.

Of particular significance at this time are the large purchases by Canada from the United Kingdom, which provided goods valued at \$299.5 million of the total; this being a new record in the history of Canada's trade with that country. However, these imports were little greater in physical volume than before the war. As the 1948 *Bank of Canada* report points out, these imports constituted a smaller proportion of the total United Kingdom exports, and a much smaller proportion of total Canadian imports, than prewar. The report concludes from this situation that, "To the extent that the United Kingdom and sterling area countries need to reduce their balance of payments deficit with Canada it is desirable from every point of view that the emphasis should be on selling more to Canada rather than on buying less from Canada".

Exports to Great Britain declined in value from the peacetime peak reached in 1947. The figures issued by the Dominion Bureau of Statistics do not indicate the value of shipments for which payment was authorized by the Economic Co-operation Administration in Washington. Nor does this favourable balance with the United Kingdom take into consideration credits made available by this country to Great Britain. The gap between exports and imports has been narrowed, and at \$389.2 million is the smallest since 1940, when Canada's favourable trade balance with the United Kingdom was \$386.9 million.

While a smaller proportion of Canada's imports came from the United States in 1948 than in 1947, a much larger proportion of her exports were sold on that market. Exports to that country rose to a peak of \$1,501.0 million, compared with \$1,034.2 million in 1947, but imports were slightly lower, the respective figures being \$1,805.8 million and \$1,974.7 million. The unfavourable balance of trade with the United States was lowered in 1948 to \$283.6 million from \$918.1 million in 1947. The increase in exports was mainly accounted for by greater shipments and higher prices in respect of non-ferrous metals, higher prices for forest products and the removal of most of the embargoes on the shipment of Canadian agricultural products to the United States.

On the other hand, Canada's exports to overseas countries, particularly of manufactured goods, were curtailed by growing exchange and import restrictions.

Prices.—Wholesale prices of all commodities declined slightly in January 1949. Wholesale prices of Canadian farm products dropped in February from the January level. Prices of poultry, eggs and potatoes increased, but these gains failed to offset price reductions in grains, hay, hides and skins, livestock and raw wool.

The initial wheat payment to western producers has been increased by 20 cents per bushel to \$1.75 per bushel, basis No. 1 Northern in store Fort William-Port Arthur or Vancouver. The increase applies to all western wheat delivered to the Board in the five-year pool period from August 1, 1945 to July 31, 1950. The new initial price will become effective on April 1, 1949. According to the Minister of Trade and Commerce it is estimated that through the new adjustment payment, wheat producers will receive about \$214 million covering their deliveries to the Wheat Board from August 1, 1945 to March 31, 1949. This payment is being made prior to seeding.

Cost-of-Living.—Since September 1948, the cost-of-living index has remained relatively unchanged. The increases and decreases have been very small. According to the Dominion Bureau of Statistics the cost-of-living index declined from 159.6 to 159.5 between January 3 and February 1, 1949. A drop in the food index from 202.2 to 200.4 counterbalanced the rise in the index numbers for fuel and light, home furnishings and services, and miscellaneous items. The February cost-of-living index, however, is 58.2 per cent above the August 1939 level.

A major task of the Economics and Statistics Division of the Food and Agriculture Organization is to build up and maintain a continuously up-to-date world picture of the situation in various FAO fields. For this purpose, a base such as will be provided by the 1950 World Census of Agriculture is tremendously important, and to help Member Nations organize this will be a principal 1949 activity of the Division. Member Governments also will be aided in improving current statistics and statistical methods in FAO's field. The Division will continue to prepare for Member Nations and FAO such fundamental economic and statistical analyses as world food appraisals, food balances, and statistical yearbooks.

In the first three quarters of 1948, 1,489 housing units were completed under the various provisions of the Veterans' Land Act, and 1,371 were started. For house construction, repair, and other services, expenditures during the period amounted to \$8.7 million, and new appropriations and allocations approved amounted to \$9.8 million. The high level of approvals points to the continued pressure of the veterans for housing benefits under this Act.

Units under construction numbered 2,132 at the end of September, 1948. Of these, 1,540 or 72 per cent were on small holdings of the individual project type. This type of project accounts for the greater part of housing activity under the Veterans' Land Act, with 1,235 completions and 1,089 starts during the January-September period, 1948.

Loans for new farm houses under the Canadian Farm Loan Act numbered 47 during the first nine months of 1948, with a total loan value of \$56,000, representing a slight increase over the corresponding period of 1947 when 43 such loans were approved with a value of \$45,000. Loans for the alteration and improvement of farm houses numbered 101 in the 1948 period and 31 in the 1947 period, valued respectively at \$45,000 and \$12,000.

Guarantees under the Farm Improvement Loans Act were made in respect of 240 new farm houses during the first three quarters of 1948. The loans had a total value of \$.3 million. In the corresponding period of 1947, 338 loans valued at \$.4 million were guaranteed for new farm houses.

INTER-GOVERNMENTAL COMMODITY AGREEMENTS UNDER ITO¹A. E. RICHARDS²

Chapter VI, Articles 55 to 70 of the *Havana Charter for an International Trade Organization* (ITO) prescribes certain criteria and outlines procedures to which Members of the Organization will adhere in the establishment and operation of inter-governmental commodity agreements.

As early as 1902 an inter-governmental sugar agreement was signed in Brussels by governments of a number of European countries. In the inter-war years agreements were entered into for rubber, coffee, tea, cotton, beef, rice, timber and tin.

Most of these agreements were drawn up by producing and exporting countries in an endeavour to overcome difficulties arising from the accumulation of surpluses. The approaches to these agreements lacked uniformity. There was no systematic treatment and no related action among them. The majority of the agreements did not provide for a representation on the controlling bodies by importing and consuming countries. During the war experience was gained in the international management of a great many commodities. This experience has been drawn upon in framing the provisions relating to commodity agreements in the Charter.

The Charter recognizes that problems connected with primary commodities are of a special nature which do not apply to manufactured goods. It provides a systematic approach to the solution of such problems. There is to be careful examination of all aspects of a commodity problem and such examination is to be conducted on a wide basis with adequate representation of both producing and consuming interests.

The steps leading to an agreement which regulates price or involves restrictions on production or trade are, firstly, the formal request for an agreement to the Organization by interested members. Secondly, the examination by a study group. Thirdly, a consensus of opinion among Members substantially interested that an international agreement is desirable to deal with the commodity situation. Fourthly, approval by a commodity conference and finally, the establishment of a commodity council to administer the agreement.

Such agreements may aim to stabilize the prices of primary commodities at levels which are fair to consumers and provide a reasonable return to producers. Provision is made for co-ordinating the activities of various international bodies concerned with commodity matters and to insure that countries do not make arrangements to improve their own individual position at the expense of others.

At the Havana Conference the representatives of some countries felt that because producers had more at stake when commodity prices fall, the provisions of the Chapter should be so framed as to place exporting countries in a more favourable bargaining position in international trade. They regarded co-ordinated control of the flow of commodities by producing countries as the best means of controlling speculation in outside markets. These views were not upheld by the majority of countries whose spokesmen felt that a balance should be maintained between producing and consuming interests. The principle of bringing all buyers and sellers together on equal terms to discuss their problems and endeavour to work out a mutually satisfactory agreement received major

¹ For earlier articles on ITO see the August and November 1948 issues of *The Economic Annalist*.

² Attended Geneva meetings and Havana Conference as adviser on the Canadian delegation.

support. It was generally felt that the larger the number of countries which could come to agreement, the greater the chance of success in attaining the objectives of equitable and stable prices and an expanding market.

Difficulties Relating to Primary Commodities.—Article 55 sets out the nature of special difficulties relating to primary products and recognizes that such difficulties may at times necessitate special treatment of the international trade in such commodities through intergovernmental agreement.

Primary and Related Commodities.—The term “primary commodity” is applied to any product of farm, forest or fishery or any mineral, in its natural form or which has undergone such processing as is customarily required to prepare it for marketing in substantial volume in international trade. This means that butter, canned fish and lumber might be regarded as primary commodities for the purpose of bringing them within the scope of a commodity control agreement.

The term “primary commodity” also covers a group of commodities of which one is a primary commodity and the others are commodities which are so closely related, as regards conditions of production or utilization, to the other commodities in the group, that it is appropriate to deal with them in a single agreement. It would be unworkable to have an agreement for wheat and not for wheat flour, or an agreement for natural rubber which did not at the same time apply to the synthetic product.

Objectives of Inter-governmental Commodity Agreements.—The Havana Conference agreed that inter-governmental commodity agreements are appropriate to achieve a number of objectives. Among these were included (a) adjustment between production and consumption when normal market forces bog down, (b) a framework for correcting uneconomic use of resources and manpower, (c) stabilization of prices and (d) development of natural resources of the world and protect them from unnecessary exhaustion. The last objective is appropriate in the case of international action applying to fishing and whaling operations.

In general, commodity agreements in the past have paid little attention to expansionist measures. In accordance with the objectives of the Food and Agriculture Organization inter-governmental agreements may be concluded with the object of expanding production, if this can be accomplished with advantages to consumers and producers. In certain cases the agreement may provide for the distribution of basic foods at special prices. The Conference also recognized that international action should be taken to assure the equitable distribution of foods or raw materials in short supply.

The draft of an *International Wheat Agreement* takes account of both wheat shortage and wheat surplus situations in its objective of assuring supplies of wheat to importing countries and markets to exporting countries at equitable and stable prices.

Commodity Studies.—Any Member of ITO on its own initiative may ask the Organization to make a study of a particular commodity. Such a Member may be interested as a consumer or as a producer, or the Member may be mainly interested in the trading aspects of the commodity. The Member does not have to wait until actual difficulties are experienced but as in the case of the *International Wheat Agreement*, may ask that steps be taken to forestall surplus difficulties.

The Organization may decide that the case put up by the applicant is not strong enough or that there is not sufficient interest indicated by other Members to warrant further action. On the other hand, the Organization may decide that a study should be made of the situation. If so it must promptly invite each Member to appoint representatives to the study group. Each Member can decide for itself whether or not it is interested in participating in the study. Since certain non-Members may have a substantial interest in the international trade of the particular commodity they may also be invited, but this is optional on the part of the Organization.

The job of the study group is to investigate the production, consumption and trade in the commodity and report fully to their respective governments and to the Organization. The study group will also make recommendations on how best to deal with special difficulties which exist or are expected to arise.

Commodity Conferences.—Although any interested Members may ask the Organization to make a study of a commodity difficulty, the Organization is required to call a conference only when the request comes from Members whose interests represent a significant part of world trade in the commodity. Normally, however, the calling of a conference will result from a recommendation by a study group. Any Member may attend the conference and non-Members may also be invited.

The principle followed in the Charter is that a commodity agreement is strengthened by wide participation and that it should include not only the main producers but all countries which have an interest in the production, consumption and trade in the commodity.

Another principle introduced is that the Members themselves will decide whether or not they are sufficiently interested to participate in a conference leading to an agreement.

General Principles Governing Commodity Agreements.—A number of principles are laid down which Members are to observe in concluding and operating inter-governmental commodity agreements. Initially all participants, whether Members or non-Members of the Organization, are placed on an equal footing with respect to obligations. However, if a Member or a non-Member does not participate at the start and thereby escapes the initial obligations under the agreement then such a country, finding it more advantageous to be "in" than "out", cannot expect to come into the agreement on as favourable terms at a later date. Here again it is recognized that only through wide participation of substantially interested countries can action to remedy commodity difficulties be made effective. Adequate participation must be afforded to countries having a substantial interest in the commodity as importers or consumers. There must be full publicity regarding all phases of any agreement proposed or concluded, regarding the considerations which arose in the course of the discussions, and periodically, regarding the operation of the agreement.

Types of Agreements.—Two types of inter-governmental commodity agreements are envisaged, (a) commodity control agreements and (b) other inter-governmental commodity agreements. A commodity control agreement is an agreement which involves the regulation of production or the quantitative control of exports or imports of a primary commodity. It has the purpose or might have the effect of reducing or preventing an increase in the production of, or trade in, that commodity; or the regulation of prices.

This would allow governments which have become parties to an inter-governmental control agreement to employ measures such as quantitative restrictions on exports or imports which are otherwise prohibited under the commercial policy provisions of the Charter.

The Organization is empowered to decide whether an existing or proposed agreement is a control agreement and Members which enter into any new commodity control agreements can do so only through a conference at which all Members are entitled to be represented. If, in an exceptional case, there has been unreasonable delay in the convening or in the proceedings of the study group, or the calling of a conference, then Members substantially interested may proceed by direct negotiation to the conclusion of an agreement. This safeguard is provided to forestall possible delaying tactics on the part of some Members.

Members which participate in inter-governmental commodity control agreements are released from certain obligations under the Charter for the particular commodity within the agreement. For that reason the circumstances governing the use of commodity control agreements are contained within narrow and rigid limits, the procedure in setting up an agreement must follow a definite pattern and the Charter lays down specific rules regarding administration, renewal and settlement of disputes which do not apply to other than commodity control agreements.

Circumstances Governing the Use of Commodity Control Agreements.—

Members of the Organization can enter into commodity control agreements only under certain conditions which are set forth in Article 59 in the following clauses.

The Members agree that commodity control agreements may be entered into only when a finding has been made through a commodity conference or through the Organization by consultation and general agreement among Members substantially interested in the commodity, that:

- (a) a burdensome surplus of a primary commodity has developed or is expected to develop, which, in the absence of specific governmental action, would cause serious hardship to producers among whom are small producers who account for a substantial portion of the total output, and that these conditions could not be corrected by normal market forces in time to prevent such hardship, because, characteristically in the case of the primary commodity concerned, a substantial reduction in price does not readily lead to a significant increase in consumption or to a significant decrease in production; or
- (b) widespread unemployment or under-employment in connection with a primary commodity, arising out of difficulties of the kind referred to in Article 55 has developed or is expected to develop, which, in the absence of specific governmental action, would not be corrected by normal market forces in time to prevent widespread and undue hardship to workers because, characteristically in the case of the industry concerned, a substantial reduction in price does not readily lead to a significant increase in consumption but to a reduction of employment, and because areas in which the commodity is produced in substantial quantity do not afford alternative employment opportunities for the workers involved.

Additional Principles Governing Commodity Control Agreements.—

Since commodity control agreements are restrictive, this article lays down the principles that such agreements be designed to assure adequate supplies of the commodity to meet World demand and at reasonable prices and that everything possible is to be done to expand world consumption of the commodity. When decisions come to a vote, importers as a group are to have a number of votes equal

to that of those Members mainly interested in obtaining export markets for the commodity. Restrictive measures are not to be applied to maintain uneconomic production but where practicable shifts are to be made to low cost areas of production. Programs of internal economic adjustment are to be undertaken which will aid in the solution of the commodity problem.

Administration of Commodity Control Agreements.—The Havana Conference agreed that the operation of each commodity control agreement should be governed by a Commodity Council and each participating country should have one representative on the Council. The voting power of representatives is to be on the basis of an equal division of votes between importing and exporting countries, and countries that do not fall precisely within either of these classes are to have an appropriate voice.

The Draft International Wheat Agreement provides for equal voting rights for exporters and importers. The Wheat Council delegates of the importing countries hold 1,000 votes and the exporting countries have 1,000 votes which are distributed in proportion to their purchases and sales.

The Organization is entitled to appoint a non-voting representative to each Commodity Council and by invitation, inter-governmental organizations such as FAO, are represented on the Council. The Council appoints its own Chairman who may be nominated by the Organization and after a consultation with the Organization the Council appoints its own Secretariat. The Commodity Council draws up its own rules of procedure and regulations which are subject to review by the Organization. The Organization can require the amendment of any regulation which is inconsistent with the provisions of the Charter which relate to inter-governmental commodity agreements. Although each Commodity Council works out its own methods and techniques to deal with a commodity problem, its operations are under constant review by the Organization through periodic reports and special reports which the Organization may call for at any time.

The expenses of a Commodity Council are borne by the participating countries and when an agreement is terminated the archives and all statistical material are to be turned over to the Organization.

Initial Term, Renewal and Review of Commodity Control Agreements.—The initial term of commodity control agreements is limited to five years. Renewal terms are not to exceed five years and this rule is to apply to any existing agreement among Members which the Organization classifies as a commodity control agreement. The term of the International Wheat Agreement is five years.

The Charter provides that when Members enter into inter-governmental commodity control agreements they are allowed to do things affecting international trade which are otherwise outlawed under the Charter. For that reason, the Organization is given wide authority in the exercise of its control over commodity agreements. Each commodity control agreement must provide that, if the Organization finds that its operation has failed substantially to conform to the rules of the Charter governing commodity control agreements then the participating countries must either revise the agreement or terminate it.

Settlement of Disputes.—When disputes arise a procedure is laid down for handling them. A question of difference concerning the interpretation of the provisions of an agreement is discussed first by the Commodity Council and if it cannot be resolved, it is then referred to the Executive Board of the Organization.

Relations with Inter-governmental Organizations.—While the drafting of this section of the Charter was under consideration in the first and second sessions of the Preparatory Committee, steps were concurrently being taken by Members to deal with international commodity problems through some form of agreement. An Interim Co-ordinating Committee with representation from the Food and Agriculture Organization and the Preparatory Committee of the United Nations Conference on Trade and Employment was set up to co-ordinate the work of the two organizations with respect to inter-governmental commodity agreements. A representative of this Committee contributed to the discussions at Havana regarding the provisions in the Charter relating to inter-governmental commodity agreements and particularly to this section which has for its object the ensuring of appropriate co-operation with other inter-governmental organizations such as the Food and Agriculture Organization. Such inter-governmental organizations by reason of their competency are entitled:

- (a) to attend any study group or commodity conference.
- (b) to ask that a study of a primary commodity be made.
- (c) to submit to the Organization any relevant study of a primary commodity, and to recommend to the Organization that further study of the commodity be made or that a commodity conference be convened.

This means that there will be active co-operation at all times between ITO and FAO. The objective is to work together but avoid duplication of effort.

Obligations of Members Regarding Existing and Proposed Commodity Agreements.—When the Charter comes into effect, Canada and all other Members of the Organization are required to transmit to the Organization the full text of each inter-governmental commodity agreement in which they are participating. New Members in the Organization must also comply with this requirement. If the Organization finds that any agreement is inconsistent with the provisions of the Charter which apply to inter-governmental agreements, the Members concerned must at once bring the agreement into conformity with the Charter provisions. The same obligation applies to prospective agreements which are under negotiations at the time the country becomes a Member.

The International Wheat Agreement provides that, if any of the terms of that agreement are inconsistent with such requirements as the United Nations through its appropriate organs and specialized agencies may establish regarding inter-governmental commodity agreements, then the Wheat Agreement is to be amended and brought into conformity.

Exceptions to Chapter VI.—The Conference agreed that the provisions of this Chapter do not apply to (a) any bilateral inter-governmental agreements, such as those which exist between Canada and the United Kingdom, (b) the provisions of an agreement which are necessary for the protection of public morals, or of human, animal or plant life, (c) any inter-governmental agreement relating solely to the conservation of fisheries resources, migratory birds or wild animals.

Members who enter into agreements which have to do with commodities in short supply do not have to go through the study group and conference stages. In order to deal with an urgent problem, such as foodstuffs in short supply, they are permitted to enter into direct negotiations in order to overcome the difficulty.

The long procedure and rigid criteria laid down for commodity control agreements are not required if the Organization finds that such agreements relate solely to the conservation of exhaustible natural resources.

HALIFAX MEAT SUPPLY, 1947-48

E. P. REID AND W. C. WAY

Some 20·7 million pounds of meat were supplied to the Halifax, N.S., market in the 12-month period September 1947-August 1948. The aggregate wholesale value of this supply was about \$6 million. About 51 per cent of the volume was beef, 38 per cent was pork, 6 per cent was lamb, and 5 per cent was veal. One-quarter of the volume was supplied directly from Nova Scotia farms, and the other three-quarters was shipped from packing houses in other provinces. (Table 1.)

These totals have been compiled from data gathered in a survey of the Halifax meat supply made in September and October 1948 by the Economics Division of the Dominion Department of Agriculture in association with the Nova Scotia Department of Agriculture and Marketing. There are no facilities for inspected slaughter in the city and most of the meat moves in carcasses and cuts either from Nova Scotia country points or from plants in other provinces. It was considered desirable to obtain an understanding of the size and nature of the meat supply for the city. Similar information was also gathered for eggs and poultry meat though results are not reported here.

Table 1.—Sources of Halifax Meat Supply, September 1947-August 1948

Origin	Beef		Veal		Pork		Lamb		Total	
	000 lb.	\$000	000 lb.	\$000	000 lb.	\$000	000 lb.	\$000	000 lb.	\$000
Fresh meats—										
Nova Scotia direct	1,180	311	704	164	2,762	700	781	277	5,427	1,452
Other provinces....	8,609	2,392	229	54	1,976	504	425	141	11,239	3,091
Sub-total, fresh..	9,789	2,703	933	218	4,738	1,204	1,206	418	16,666	4,543
Processed meats—										
Other provinces....	803	248	.....	.....	3,211	1,264	.....	.....	4,014	1,512
Total.....	10,592	2,951	933	218	7,949	2,468	1,206	418	20,680	6,055

The veal and lamb supplies were provided by Nova Scotia producers to the extent of 75 and 65 per cent respectively. Provincial supply of pork was 35 per cent of the total and of beef only 11 per cent. All the cooked, canned, and processed meats were shipped in, and the quantities have been incorporated in the pork and beef totals. Of the 15·2 million pounds of shipped-in supply, 11·2 million pounds were fresh meats and 4·0 million pounds were processed. Based only on fresh meat, Nova Scotia pork comprised 58 per cent of the total and beef from within the province made up 12 per cent of all fresh beef supply.

The nearest large packing house to Nova Scotia, that at Moncton, is only 40 miles from the boundary of the province and only slightly farther from many livestock-producing Nova Scotia farms. A considerable number of Nova Scotia hogs and some cattle are shipped regularly to the Moncton plant, where they are slaughtered and enter the pool of meat from which shipments are made in all directions including into Nova Scotia and Halifax. In the year of this survey the volume of such shipment of hogs from Nova Scotia farms, through shipping clubs, to the Moncton plant was more than sufficient (by about 40 per cent) to account for the volume of pork which was shipped from Moncton to the Halifax area. This statement is based on poundage considerations only, without reference to whether or not the various fresh, cured, and smoked pork

products shipped from Moncton to Halifax constituted a full balanced selection from entire hog carcasses. Shipments of cattle, calves, and lambs by Nova Scotia farmers to Moncton were not nearly as great in proportion to the beef, veal, and lamb shipments from Moncton to Halifax.

Market Area.—The Halifax market considered here is the city and principal suburbs and adjacent towns including Dartmouth and Bedford. The population last year was estimated at about 120,000, which might seem to indicate a rather high average per capita consumption of 170 pounds per year or more. However, the total quantity of meat supplied to the market, 20.7 million pounds, includes amounts sold by chandlers and others for ship provisioning. It was not feasible to determine total sales in this class, but 2,000,000 pounds is estimated to be a low figure.

Local meat was delivered to Halifax by producers and country butchers, who sold it to retailers, to restaurants, hotels, and institutions, to packers' branch houses, and to consumers at the city market. In one instance a "country" butcher slaughtered in premises in the city, but he bought his livestock supply in the country much as did the dealers who made a practice of slaughtering in the country. Table 2 sets forth the pattern of supply of local meat according to the categories outlined.

Table 2.—Channels of Supply of Nova Scotia Meats to Halifax, September 1947—August 1948

Outlet	Beef		Veal		Pork		Lamb		Total	
	000 lb.	\$000	000 lb.	\$000	000 lb.	\$000	000 lb.	\$000	000 lb.	\$000
Retail stores.....	764	201	632	147	864	215	501	184	2,761	747
City market, restaurants, institutions.....	78	21	27	6	139	40	10	3	254	70
Packing house branches....	338	89	45	11	1,759	445	270	90	2,412	635
Total.....	1,180	311	704	164	2,762	700	781	277	5,427	1,452

In the cases of beef, veal and lamb, retail stores, principally butcher shops and chain stores, handled most of the volume, the percentages for these three kinds of meat being respectively 65, 90, and 64 per cent. For pork, sale to wholesalers—branches of national packing companies—was the outlet for 64 per cent. In all cases the city market and meal-serving establishment outlets were minor, accounting for 7 per cent of the beef sold and less of the other meats.

Prices.—At the opening of this 12-month period maximum prices for meats were still being enforced by the Wartime Prices and Trade Board. Decontrol was effective on October 22, 1947, and from that time there was an upward trend in all wholesale meat prices at Halifax. Prices realized by Nova Scotia producers and country butchers in sales in Halifax to retailers and wholesalers were as outlined in Table 3.

Table 3.—Wholesale Prices of Nova Scotia Meats at Halifax, September 1947—August 1948

	Beef	Veal	Pork	Lamb
	cents per pound			
September.....	24	21	23	31
March.....	26	23	25	36
August.....	32	27	28	44
Average.....	26	23.5	25	36

Delivered prices of shipped-in meats were within a cent or two per pound of those for supplies from the province, as the basic factors determining meat prices in eastern Canada mainly governed in each case. Prices for processed pork and beef were, of course, considerably higher, the product having been transformed to a more select article.

Inspection and quality.—In the absence of inspected slaughter, usually a federal function, Halifax consumers were protected by the activities of a sanitary inspector who, under city authority, visited at frequent intervals all retail establishments selling meat, where he made spot inspections. Retailers interviewed in the survey spoke well of the quality of Nova Scotia veal and lamb; nearly all rated such local meat equal to or better than that received from other provinces. There was almost as strong support for Nova Scotia pork compared to shipped-in, but only a minority of the retailers regarded local beef as equal to western and other shipped-in beef.

CHANGES ON DAIRY FARMS IN DUNDAS COUNTY, ONTARIO, BETWEEN 1918 AND 1948

D. J. PACKMAN

A study is being made of the changes that have taken place in farm population, organization and size of farms on Dundas County farms during the thirty-year period from 1918 to 1948.

In 1918, the Farm Management Department of the Ontario Agricultural College conducted a survey of the farm business on 340 dairy farms in Dundas County. The records obtained at that time have been made available to the Economics Division of the Dominion Department of Agriculture which is undertaking a study of the same farms in 1949. Information at five-year intervals has been compiled from township assessment rolls covering the thirty-year period.

Of the 340 farms included in the original study, reliable information was available for 295 farms. During the thirty-year period, 24 farms merged to become twelve farm units and four of the original farms were sold in small lots, leaving a total of 279 farms in 1948. Fifty-five of the original operators remained on their original parcel of land throughout this time.

Description of the Area.—The county of Dundas is situated in the central part of Eastern Ontario, forty miles south of the city of Ottawa, with the St. Lawrence River as its southern boundary. The soils of the region vary from fine sand to clay loam in texture. The Chesterville clay loam is one of the more dominant soil types and is extremely productive. The topography consists of relatively low undulating ground with some poorly drained soils which are unsuitable for cultivation.

Both climatic and economic conditions render the district particularly suitable for dairy farming. Fifty-five per cent of the farms specialize in dairying and fifty per cent of the income is obtained from the sale of dairy products. Outlets for whole milk, concentrated milk and cheese are found in Eastern Ontario and in the City of Montreal.

Size of Farm.—The average size of farm increased from 98 acres in 1918 to 104.3 acres in 1948. There was a noticeable increase in the number of farms ranging from 160 to 200 acres, accompanied by a large decrease in farms of less than 80 acres.

The amount of cleared land per farm increased from 84.2 acres in 1918 to 95.1 acres in 1948. Farmers increased the acreage in cleared land by 5.7 per cent. This was accomplished by decreasing the amount of slash land by 2.4 per cent, wooded land by 2.1 per cent and the amount of waste land by 0.9 per cent per farm during the thirty years.

Farm Population.—There has been a reduction in the average number of persons per farm from 4.9 in 1918 to 3.9 persons in 1948. The total decrease in adult population was 0.3 persons per farm as compared with a decrease of 0.7 children under twenty-one years of age. The decline in the male population was more pronounced, showing a decrease of 0.2 persons per farm whereas the female population decreased by 0.1 person. (Table 1.)

The above figures include those persons who were permanent residents on the farm, including hired help only if the person or persons resided on the farm for the major part of the year. Transient hired help is not included in the study.

The greatest change in the size of the farm family occurred in Williamsburg Township where there was a reduction of 1.5 persons per farm, of which 1.3 were children. Conversely the farm population in Matilda Township remained constant at 4.5 persons per farm. Despite the fact that the population per farm has remained constant there has been an increase of 0.2 females, a decrease of 0.1 males and a decrease of 0.1 children under 21 years.

The decrease in the average size of family was gradual over the thirty-year period. Increased mechanization has permitted the substitution of machinery for manpower and therefore fewer persons were required per farm in 1948 than in 1918. At the same time the opportunity for higher wages and shorter working hours has lured many of the farm population to urban areas.

Table 1.—Changes on Dundas County Farms, 1918 - 1948

	Dundas County	
	1918	1948
Average Size of Farm (acres) ^a	98.05	104.26
Average Acreage per farm of:		
Cleared Land (acres).....	84.25	95.12
Slash Land (acres).....	7.42	5.41
Woods (acres).....	5.42	3.55
Waste Land (acres).....	0.96	0.18
Average Age of operator.....	45.3	51.7
No. persons residing on farms.....	4.9	3.9
Average number of males (over 21).....	1.5	1.3
Average number of females (over 21).....	1.3	1.2
Average number of children (under 21).....	2.1	1.4
Total Number of Farms Rented.....	27	28

^a 1918—No. of farms 295; 1948—No. of farms 278.

SOURCE: Information obtained from Assessment Rolls in Dundas County. December 1948.

Farm Transfers.—Nineteen per cent of the original owners remained on the same parcel of land during the entire period. Thirty-six per cent of the farms had one change of ownership, twenty-five per cent were transferred twice, the remaining farms three or more times. For every hundred farms that changed hands thirty-three remained within the family group and the remainder were transferred to other persons.

The years 1943-1948 witnessed a more rapid turnover of farms than any other period during the thirty years. During this period seven per cent of the farms changed operators each year. The most stable period occurred from 1924 to 1928 when these farms had an annual turnover of 4.6 per cent.

The percentage of transfers to persons within the family group was smaller for those farms which changed ownership most frequently. In the case of those farms for which the deed changed hands but once, fifty per cent of the farms remained within the family group, while on those farms that were transferred twice, thirty-eight per cent remained within the family name.

When all farms were considered, the average change of operators was 1.6 per farm during the period from 1918 to 1948. The average change for those farms that remained within the family group was 0.9, whereas farms that were transferred to persons outside the family group had an average of 2.3 transfers per farm.

Age of Owners as related to Transfer of Land.—Throughout this period, there has been a tendency for farmers to retain ownership of their farm to a more advanced age.

Table 2.—Age of Owner at Time of Transfer

	Age of owner at time of transfer		
	To member of family	To all other farms	Average all farms
	—years—		
1918-1923.....	59.3	48.6	50.4
1924-1928.....	59.0	55.1	56.2
1929-1934.....	65.1	55.6	58.8
1935-1938.....	69.4	57.5	61.3
1939-1943.....	72.1	61.4	64.4
1944-1948.....	68.6	60.7	62.6

SOURCE: Assessment Rolls in Dundas County, December 1948.

Farmers whose farm land remained in the family name generally retained ownership till they had reached seventy years of age. After the father had retired a younger member of his family who acquired ownership was usually 37 years of age. The fathers have no doubt been desirous of maintaining a high degree of control as long as they were physically capable despite the fact that the sons were doing the major portion of the work.

During World War II, high prices of agricultural products coupled with an acute labor shortage induced men to continue operations past their normal retirement age. The slight decline in the age at which farmers tended to dispose of their property from 1943 to 1948 may not have much significance but may also represent a return to a more normal situation.

In summation, the county of Dundas has witnessed numerous changes in its population distribution, organization and the size of its farms. The changes and adjustments made, however, are very similar to those for the province of Ontario as a whole.

The average value of occupied farm land in Canada for 1948 is reported at \$39 per acre. This represents an increase of 11 per cent over the average value indicated in 1947 and an increase of 62 per cent over the 1935-39 average. The upward trend in farm land values from pre-war levels reflects, at least in part, the relative changes which have occurred in the price levels of farm products and of the things which farmers buy. The Dominion Bureau of Statistics index of farm prices of agricultural products for 1948 was 144 per cent above the 1935-39 level, while for the same year the index of prices of commodities and services used by farmers, including living costs, had advanced 83 per cent from the 1935-39 base-period level.

CHANGES IN FARMING PATTERN IN SOUTHEASTERN ALBERTA

S. MYSAK

Wheat farms in the short grass prairie zone of southeastern Alberta¹ have undergone noticeable changes during the past two decades. The average size of farm increased from 808 to 998 acres. Twenty years ago about 50 per cent of the farms depended on horses for draft power, whereas today over 95 per cent use tractors. With the advent of the tractor, the adoption of the oneway disc plough as the main tillage implement and the combine-harvester as the main harvesting equipment, has become universal. The proportion of cropland sown to wheat has remained fairly constant, about 50 per cent, but the proportion of summerfallow has been increased to a point where the standard practice today is a two-year crop rotation, namely, wheat after summerfallow. Land values have probably undergone the least change in this section of Alberta. Labour is about 50 per cent more efficient today and better use is being made of capital invested in machinery now than twenty years ago.

Area Studied.—In order to measure changes in wheat farms, reference is made to two farm business studies conducted in southeastern Alberta fifteen years apart—one in 1931 and the other in 1946.² The 1931 study was made near the town of Bow Island, about forty miles west of Medicine Hat, and the 1946 study was made near the town of Foremost, located about twenty miles south of Bow Island³. The areas are contiguous and have similar soils as well as climatic conditions. Topographical features are also very much alike. To a very large extent agricultural development in both areas has depended upon wheat. Thus, since the two areas are similar in many respects it is assumed that the farm business data collected in both areas are comparable, and that changes in farm patterns during the fifteen year interval have taken place similarly in the adjacent areas.

There were 82 farm business records taken in the 1931 survey and 77 in 1946. Farms were selected at random within the various size groups in both studies.

Land Use.—Changes in the use of cropland between 1931 and 1946 are indicated in Table 1.

Although comparing uses of land on the basis of two single years may not always present an accurate picture as to what is happening in an area over a period of years, nevertheless, it is felt that certain general conclusions can be drawn from the data presented in Table 1. The proportion of cropland sown to wheat has remained fairly constant over the fifteen-year period. There has been less acreage sown to coarse grains in late years, especially oats. Feed requirements on wheat farms of southeastern Alberta have become less with the disappearance of horses. Some wheat was still sown on stubble land in 1931, but very little in 1946, because wheat yields on stubble have been very

¹Short grass prairie region, or the brown soil zone, comprises about twelve million acres in the southeastern corner of Alberta. It extends into the southwestern section of Saskatchewan where it covers a much larger area than in Alberta.

²Data were taken from the original records of farm business in both these years. In 1931 the Agricultural Economics Branch (now Economics Division), Dominion Department of Agriculture in co-operation with the Universities of Alberta and Saskatchewan, made a survey of farm power in Alberta and Saskatchewan. In 1946 the Economics Division conducted a farm business survey in southern Alberta in connection with a land classification project covering the short grass prairie region.

³Besides wheat farms, cattle ranches occupy a fairly large area in the short grass zone, especially where the topography is rough, but wheat farms are by far the most important in this section of Alberta. This is well illustrated by a type-of-farming areas map recently prepared by the Dominion Economics Division in co-operation with the Census Division, Dominion Bureau of Statistics.

Table 1.—Changes in Land Use on Surveyed Wheat Farms in Southeastern Alberta, 1931 and 1946

Land Use	Per Cent of Total Cropland	
	1931	1946
	per cent	
Wheat.....	49.6	48.7
Oats.....	4.0	1.4
Barley.....	0.1	0.9
Rye.....	7.4	0.6
Flax.....	0.4	0.3
Other.....	4.1	1.4
Breaking.....		0.7
Summerfallow.....	34.4	46.0
Total.....	100.0	100.0
Average crop acreage per farm.....	543	762

disappointing over a period of years in this semi-arid region. Probably the most significant change in land use from 1931 to 1946 was the almost universal adoption of a two year crop rotation, namely, wheat and summerfallow.

The proportion of cropland devoted to rye in the two years is somewhat misleading. Rye is a crop adaptable to the short grass region, especially on lighter soils, and farmers grow more or less rye depending on the relationship of wheat to rye prices.

Size of Farm.—The trend toward increased farm size is revealed by the fact that the total acreage per surveyed farm averaged 808 in the 1931 survey as compared with 998 in the 1946 survey—an increase of almost 200 acres per farm. Cropland acreage also increased from 543 to 762 per farm (Table 1). Census figures for the whole southeastern region indicate the same trend. In Census Division 1, which covers the southeastern part of Alberta, the number of farms having 640 acres or more increased from 45 per cent of all farms in 1931 to 54 per cent in 1946¹.

Mechanization.—Probably the most noticeable change between 1931 and 1946 has occurred in mechanization of farm draft power. In 1931 about half of the surveyed farms depended on horses, whereas in the 1946 survey practically every farm had a tractor.

Table 2.—Farm Power and Farm Machinery Holdings on Surveyed Farms in Southeastern Alberta, 1931 and 1946

Kind of Machinery	1931 Survey—82 Farms		1946 Survey—77 Farms	
	No. of Farms with Item	Per Cent of All Farms	No. of Farms with Item	Per Cent of All Farms
Tractor.....	40	49	70	97
Threshing Separator.....	11	13	5	6
Combine Harvester.....	29	35	56	72
Plow.....	74	90	44	57
Oneway Disc Plow.....	18	22	71	92
Blade Weeder.....	9	11	36	47
Automobile.....	64	78	47	61
Truck.....	28	34	49	64

¹Canada. Department of Trade and Commerce, Dominion Bureau of Statistics. *Census of the Prairie Provinces, Population and Agriculture*. Ottawa, 1946.

With the advent of the tractor and its adaptation to many farm uses, type of farm machinery and equipment has changed considerably. Continuous use of tractors as a source of farm power has resulted in the development and improvement of special equipment for field operations. Table 2 illustrates the changes in farm power and farm machinery.

Besides the almost universal change-over to tractor power, other changes shown in Table 2 are of interest. Replacing the mouldboard plough, the oneway disc plough has become the main tillage implement in the short grass region of Alberta. Combine-harvesters are found on almost three-quarters of the farms, whereas only one-third had them in 1931. Although there were not quite as many cars on farms in 1946 as in 1931, the number of trucks had almost doubled. Scarcity of cars during the war years may have been the reason for this.

Apparently there was more efficient use made of capital invested in machinery in 1946 than in 1931. After allowing for changes in the price level between the two periods, it was found that the average investment in machinery and equipment per one hundred acres of cropland was \$577 in 1931 as compared with \$388 in 1946. This increase in efficiency was brought about by changes in the type of machinery, cultural practices, and the increased crop acreage per farm.

Capital Structure.—Comparative figures for the two studies showing distribution of farm capital under different items are given in Table 3.

Table 3.—Distribution of Capital on Surveyed Farms in Southeastern Alberta, 1931 and 1946

Year of Survey	No. of Farms	Average per Farm			
		Value of Total Real Estate	Value of Buildings	Value of Machinery and Equipment	Value of Livestock (Excluding horses)
		—dollars—			
1931.....	82	11,466	2,523	2,843	382
1946.....	77	10,367	2,482	3,710	487

Real estate values were higher in 1931 than in 1946. The difference is not fully indicated by the table, since the 1931 average farm was about 200 acres smaller than in 1946. In 1931 farmers in the short grass prairie tended to value their property on the basis of reasonably good returns realized in the immediate past. They had not yet lived through the series of unusually dry years of the thirties coupled with a period of very low farm prices.

Labour Requirements.—The labour equivalent averaged 1.67 man units per farm in 1931 as compared with 1.38 in 1946. In terms of crop acres handled per man, this worked out to 325 cropland acres in 1931 as against 556 in 1946. With the disappearance of horses and the advent of large power machinery, the efficiency of farm labour on prairie wheat farms has increased by more than 50 per cent.

Summary.—During the past two decades, wheat farms in the short grass prairie region of southeastern Alberta have undergone noticeable changes. Farms are larger, tractors are the main source of power, tillage practices and use of land are changing, and farm manpower is becoming more efficient.

THE WORK OF FAO¹

Founded at Quebec in October, 1945, the Food and Agriculture Organization of the United Nations has completed three years of work. Through FAO, governments are working together to increase production and improve the distribution and use of food and other products of farms, forests and fisheries, and to better the condition of rural people. International co-operation in this field is now a reality.

In reporting to the Fourth Session of the FAO Conference at Washington in November 1948, the Director-General of FAO drew attention to three trends in the work of the Organization. First, the food situation is such that the drive for increased production together with better management of basic soil and water resources has been and will probably continue to be the dominant note in international and national plans. Such striving towards increased production has a danger for countries already producing at a high level. Unless adequate steps are taken to achieve orderly international marketing, such as attempted through the proposed International Wheat Agreement, producers of some important agricultural commodities in those countries are likely to face trouble as world production increases. Second, there has been a marked trend during the year toward decentralizing FAO operations as the Organization comes to grips with specific problems in specific areas. Examples of such activities are found in the Agricultural Advisory Services carried on under the FAO/UNRRA Agreement, in the holding of conferences on regional problems in agriculture, forestry, fisheries, nutrition and statistics, in the setting-up of small regional working parties especially in co-operation with the United Nations Regional Economic Commissions, and in arrangements for the work of FAO Regional Representatives. The third notable trend is the development of the network of interrelated activities with other agencies, both within and without the United Nations Organizations. Through the Economic and Social Council, FAO has been active in hastening this development which is necessary not only to avoid duplication of work but to make possible well rounded attacks on important problems by all forces concerned.

International Action

World Food Problems Studied.—In addition to the annual review of world food and agriculture problems and national programs which is now an integral part of the annual FAO Conference, the Council of FAO has kept world problems of food and agriculture under review during the year. Following the Washington Conference in 1948 a study group was established within FAO to give attention to problems of commodity distribution.

Since its inception FAO has played a leading role in the bringing together of representatives of member governments to study a wide range of problems. One of the first steps taken after the establishment of FAO was the calling of a Special Meeting on Urgent Food Problems by the Director-General in May 1946 at Washington. This meeting resulted in the creation of the International Emergency Food Council to undertake the responsibilities of allocating foods in short supply for the duration of the emergency. The allocation functions of this Organization were transferred in January 1948 to the International Emergency Food Committee operated under the Council of FAO. Also in the emergency field of action was the sponsoring by FAO of a Special Conference on Cereals which was held in Paris in 1947 to consider the very serious world cereal

¹Prepared by S. C. Hudson from reports issued by the Food and Agriculture Organization of the United Nations.

deficit in 1947-48. Leading agricultural officials of forty nations made recommendations to governments with the object of making better use of existing supplies of cereals in deficit countries and increasing exports from surplus areas.

Agreement on plans for increasing the food supply of the countries of the Near East was reached at a conference of representatives of those nations at Cairo, Egypt, in February 1948. One of the most important recommendations by the Conference covered the development of irrigation projects in various Near East countries to open up idle land for cultivation.

A Rice Study Group held a meeting at Trivandrum, India, in May 1947 to discuss methods of increasing rice production. As a result of recommendations from this meeting, an International Rice Conference was convened in Baguio, Philippines, in March 1948. This Conference recommended the establishment of an International Rice Council for the purpose of achieving co-operative action on rice production, conservation, distribution within nations, and consumption.

Conferences on Forestry.—The International Timber Conference held at Marianske Lazne, Czechoslovakia, in 1947 considered the shortage of wood which was impeding Europe's rebuilding program. In developing a program for overcoming this shortage consideration was given to long-range problems as well as to the current emergency. As a result, all the major countries in Europe, with the exception of the Soviet Union, increased their output and exports by ten per cent in 1947. A program for the development of the forestry resources of Latin America was approved at the Latin America Forestry and Forest Products Conference at Teresopolis, Brazil, in April 1948. Forestry conferences planned for the current year include a Pulp and Paper Preparatory Conference in Montreal, and the Third World Forestry Congress to be held in Helsinki, Finland.

Fisheries Council Established.—Representatives of eight FAO member nations met at Baguio in February 1948 and drew up a draft agreement for the Indo-Pacific Fisheries Council. The purpose of this Council is the development and proper utilization of living aquatic resources in the Indo-Pacific areas. A meeting for the inauguration of this Council is being held in Singapore in March 1949.

The Nutrition Conference which was convened at Baguio at the same time as the Fisheries Conference studied means for the retention of nutrients in rice, the comparative nutritional value of different varieties of rice, methods of determining the thiamine content of rice and methods of improving rice diets.

Technical Assistance

Missions.—FAO stands ready to provide technical missions to countries requesting such assistance for the purpose of studying and making recommendations with regard to specific problems. The first such mission was the FAO Mission to Greece which spent three months in that country in 1946 studying the best ways of restoring and improving Greek agriculture. Its report recommended a comprehensive 25-year development program based on the full scale development of water resources. In 1947 a Mission, comprising ten agricultural scientists, spent nine weeks in Poland exploring the possibilities of increasing the output of Polish agriculture and providing people with an adequate diet. In 1948 FAO Missions went to Siam and Venezuela. The Mission to Siam made a broad survey emphasizing possible improvements in the production of rice and of forest products, and in the management of livestock, while the Mission to Venezuela made recommendations on ways of increasing edible oils which have been seriously lacking in the Venezuelan food supply.

Livestock Improvement.—Important steps towards greater production of food through the improving of livestock has been carried on by FAO. A program for the control of rinderpest disease in cattle, which has long been a major scourge in Asia and Central Africa, has been started by the Chinese government with the help of FAO. A thorough survey of the rinderpest situation in Siam was carried on by a specialist on the FAO Mission to that country. As a result of this survey FAO is working for the establishment of a Far East Veterinary Group to lead the fight against this disease in that region. An FAO veterinarian was sent to Ethiopia in 1948 to assist laboratory workers in that country in the production of vaccine against rinderpest and other animal diseases. A demonstration school was conducted by FAO in England to provide European veterinaries with recent information that could be used to improve the production of vaccine and serums in their laboratories. Consideration was also given to advanced methods in virus research and laboratory diagnosis. An artificial insemination school which was carried on by FAO in Italy last summer enabled European scientists to move forward on program work for the artificial insemination of livestock.

Introduction of Seeds.—Since early 1948 FAO has been sending seed samples of newly developed varieties of crops to Austria, Czechoslovakia, Hungary, Italy, Poland, Yugoslavia and China. This seed will enable plant breeders in the different countries to carry on experimental work that should lead to the improvement of native crops and the use of new ones with the objective of increasing food production. A hybrid corn school was held in Italy in 1947 to demonstrate the latest corn breeding techniques and more recently FAO arranged for hybrid corn seed to be sent to experimental stations in thirteen European countries as well as in Egypt, Lebanon and Syria.

Other Assistance.—An FAO entomologist visited Poland in 1947, and Egypt in 1948, to assist in insect control work. In 1948 a meeting was held in London to consider methods of preventing losses in stored grains from infestation. A further conference of Latin American governments studied this problem in Cali, Colombia, in February 1949.

Technical assistance was also provided in connection with food preservation in Czechoslovakia, Greece and Italy while aid was given to Near East governments in the development of irrigation and drainage projects.

World Agriculture Census.—One of the major undertakings which has been sponsored by FAO is the 1950 World Census of Agriculture. This census will be conducted by member governments each of which will be responsible for publishing results of its own census. FAO will publish only comparable results pertaining to certain products. Training schools for statisticians have been conducted by FAO in preparation for this census.

Regional Development.—Work at the regional offices has been clarified by establishing principles which will govern their organization. The main objects are to ensure centralized policy and program-making at the headquarters of FAO but decentralized operation of programs in the regions. A regional representative directly responsible to the Director-General will have charge of actual operations in each region. Technical workers will be sent to the region for temporary periods from FAO headquarters as they are needed. The nucleus of the regional office in the Near East was established in Cairo during 1948. In Europe the work of the regional office at Rome has been supplemented by FAO activities at Geneva, the centre for co-operation with ECE. Regional representatives for the Far East and Latin America have also been appointed.

General and regular service to governments are crystallizing into more different patterns as needs become clearer and experience shows what can and cannot be done with the funds available. In particular, the year has seen some notable publications in international statistics including the Yearbook of FAO Statistics, the Yearbook of International Trade in Agricultural Commodities, the Yearbook of Forestry and Forest Products Statistics, and an International Yearbook of Fisheries Statistics. Publication of statistical bulletins for agriculture, forestry and fisheries is also carried on. A number of technical studies in fields of interest to member nations have been published.

REVIEW OF LITERATURE

Canada's Economy in a Changing World. Edited by J. Douglas Gibson. Toronto, The Macmillan Co. of Canada Ltd. 1948. pp. XIII + 380.

This book was issued under the auspices of the Canadian Institute of International Affairs, under whose direction it was written. It is a collection of essays by different individuals. As indicated in the foreword, "No effort was made to achieve unanimity". Indeed, considerable diversity of view exists in the study. The intention was to combine collective discourse with individual writing of the essays and individual responsibility for them. The contributors, the majority of them economists, include such names as Maurice Lamontagne, H. F. Angus, Kenneth R. Wilson, W. A. Mackintosh, D. C. McGregor, Wynne Plumptre, Courtland Elliot, M. Freedman, and W. T. G. Hackett. The subject matter included is revealed by the chapter headings: *The External Background of Canada's Economic Problems; Some Political Aspects of Canada's Trade Problem; Canada's Interest in Multilateral Trade; Dependence on Export Markets Overseas; Canadian Agricultural Policy and Export Trade; Dependence on Imports from the United States; The "Bank": The "Fund": and the Canadian Dollar; Exports to the United States; and The Role of Capital Imports.* The Appendix contains a Chronology of Major Events of Economic Interest to Canada, and for those readers who wish to pursue this subject, a list of additional readings.

HIBBARD, Benjamin Horace.—*Agricultural Economics.* New York, McGraw-Hill Book Company, Inc. 1948. pp. X + 441.

The author, a professor Emeritus of Agricultural Economics at the University of Wisconsin, has written a book dealing with the economics and the institutions of United States agriculture. The book is divided into 34 chapters and ranges from such subjects as the *Meaning of Economics* to *The American Society of Equity*. The general reader will find the book filled with factual data and also with discussions on such subjects as *Why Do So Many Farm, Smoot-Hawley Tariff Act* and *Valuation of Farm Land and Its Products*. The author's concluding statement sums up to a large degree his philosophy, "What we most need, and eventually must have, is re-established world trade".

Total wool production in 1948 amounted to 11,915,000 pounds as compared with 14,090,000 pounds in 1947. Slightly lighter average weights per fleece contributed to the decline which was mostly due to fewer sheep on farms. Decreases from 1947 were 1,753,000 pounds in shorn wool and 422,000 pounds in pulled wool.

Imports of wool during 1948 were over 15 million pounds greater than during 1947 while exports were slightly less. Domestic disappearance, assuming no change in stocks, amounted to 102,167,000 pounds in 1948 as compared with 88,882,000 pounds in 1947.

The weighted farm price of shorn wool for Canada as a whole, rose from 28.2 cents per pound in 1947 to 28.9 cents per pound in 1948.

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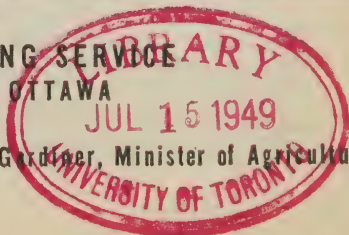
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A REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION, MARKETING SERVICE
DEPARTMENT OF AGRICULTURE, OTTAWA

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ANNUAL AND MONTHLY INDEX NUMBERS

WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year	Wholesale Prices 1935-39=100			Farm Prices of Agricultural Products 1935-39=100	Commodities and Services used by Farmers (a) 1935-39=100		Cost of Living 1935-39=100	
	Farm Products (b)	Field Products (c)	Animal Products (d)		Equip- ment and Materials (f)	Eleven Factor Index (g)	Farm Living Costs (a) (h)	Urban Living Costs (i)
1913.....					85.4	.....	80.1	79.1
1914.....					90.2	85.3	82.3	79.7
1915.....					96.9	91.6	86.5	80.7
1916.....					101.7	100.5	93.7	87.0
1917.....					140.7	140.5	111.5	102.4
1918.....					164.1	160.2	131.1	115.6
1919.....					169.1	167.9	143.0	126.5
1920.....					190.1	186.5	171.3	145.4
1921.....					147.4	152.5	139.9	129.9
1922.....					124.6	134.1	127.9	120.4
1923.....					118.3	130.6	128.3	120.7
1924.....					122.3	131.9	125.5	118.8
1925.....					123.2	131.8	123.9	119.8
1926.....	144.4	158.5	130.2		119.9	130.6	121.1	121.8
1927.....	138.6	149.4	127.8		119.9	131.2	119.8	119.9
1928.....	136.3	134.3	138.2		118.3	129.3	118.5	120.5
1929.....	140.8	137.2	144.4		117.6	127.9	117.3	121.7
1930.....	119.5	105.8	133.3		105.6	117.0	113.7	120.8
1931.....	78.9	65.0	92.7		92.2	100.9	103.9	109.1
1932.....	65.5	60.4	70.5		89.3	93.3	97.8	99.0
1933.....	69.3	69.3	69.2		88.8	89.8	95.8	94.4
1934.....	83.5	80.5	86.5		96.8	95.5	97.9	95.6
1935.....	89.2	84.4	94.1	88.0	95.6	95.4	97.9	96.2
1936.....	97.9	102.2	93.7	96.9	98.7	98.1	98.3	98.1
1937.....	117.4	128.9	106.0	119.7	108.4	105.3	102.9	101.2
1938.....	102.9	100.9	104.8	105.0	101.2	101.7	101.9	102.2
1939.....	92.6	83.7	101.5	91.8	95.7	99.3	99.5	101.5
1940.....	96.1	85.4	106.7	96.8	101.8	106.8	108.5	105.6
1941.....	106.6	88.9	124.4	110.2	107.8	116.1	114.1	111.7
1942.....	127.1	109.7	144.6	133.1	119.2	131.6	119.0	117.0
1943.....	145.4	129.0	161.8	157.8	122.4	143.4	121.7	118.4
1944.....	155.3	144.5	166.1	172.4	126.0	148.0	122.8	118.9
1945.....	165.3	160.4	170.2	184.2	125.9	152.1	123.2	119.5
1946.....	177.0	172.9	181.2	200.8	128.0	157.0	127.1	123.6
1947.....	189.7	179.1	200.2	212.6	139.5	170.4	138.3	135.5
1948.....	229.6	195.6	263.7	252.6	173.1	196.9	162.8	155.0
1948								
May.....	228.4	205.8	251.2	247.6	.....	.....	.....	153.3
June.....	239.1	213.3	265.1	257.5	.....	.....	.....	154.3
July.....	240.0	209.9	270.3	259.3	.....	.....	.....	156.9
Aug.....	238.2	190.7	285.8	264.2	176.7	203.7	169.5	157.5
Sept.....	236.2	184.6	287.9	261.5	.....	.....	.....	158.9
Oct.....	232.7	184.4	280.9	260.1	.....	.....	.....	159.6
Nov.....	232.4	186.2	278.6	257.8	.....	.....	.....	159.6
Dec.....	233.6	186.7	280.4	259.7	.....	.....	.....	158.9
1949								
Jan.....	232.2	187.7	276.7	257.5	180.3	198.3	171.8	159.6
Feb.....	226.2	186.1	266.3	253.0	.....	.....	.....	159.5
Mar.....	224.2	183.7	264.7	251.2	.....	.....	.....	159.2
April.....	224.5	184.9	264.1	251.3	.....	.....	.....	159.3

(a) Revised July, 1948, by The Dominion Bureau of Statistics.

(b) Canada. Dominion Bureau of Statistics, Prices Branch. *Prices and Price Indexes*. (Mimeo). Ottawa, Monthly.

(c) Ibid (b). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid (b). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agricultural Division. *Index Numbers of Farm Prices of Agricultural Products*. (Mimeo). Ottawa, Monthly.(f) Canada. Dominion Bureau of Statistics, Prices Branch. *Price Index Numbers of Commodities and Services Used by Farmers*. (Mimeo). Ottawa, Jan., Apr., and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) *Price Index Numbers of Commodities and Services Used by Farmers*. Includes food, clothing, fuel, household equipment, health, maintenance and miscellaneous.(i) *Prices and Price Indexes*. Includes food, rent, fuel and lighting, clothing, home furnishings and services, miscellaneous and retail prices of commodities.

THE ECONOMIC SITUATION

The total acreage seeded to wheat in Canada for harvest is expected to be nearly 27 million acres, three million acres more than in 1948. The Agricultural Division of the Dominion Bureau of Statistics published, on May 12, acreage intentions for field crops in 1949. The Bureau report indicates that prairie farmers intend to increase summerfallow area by more than half a million acres. Decreases are anticipated for the other major grain crops. Land summerfallowed will likely cover about 20.6 million acres. Oats at 10.8 million acres are down four per cent from last year while barley at 6.0 million has dropped seven per cent. Extremely sharp declines will occur in seedings of rye and flaxseed, the extent of the change from last year in these two crops being 43 per cent and 75 per cent respectively. The acreage to be seeded to potatoes this year is five per cent below the 1948 level. In evaluating this information, the Bureau qualification must be considered. These intended acreage estimates are merely indicative of farmers' plans at the end of April, and acreages actually seeded may, therefore, vary considerably from the intentions figures, depending upon conditions affecting seeding subsequent to April 30.

For all Canada, the intended acreages for 1949 as reported at April 30, are as follows, with the 1948 acreages within brackets: Spring wheat 26,254,200 (23,247,400); oats 10,772,600 (11,200,500); barley 6,016,000 (6,495,300); spring rye 322,200 (497,200); flaxseed 484,300 (1,934,500); potatoes 481,600 (508,200); summerfallow 20,566,000 (19,991,000).

Crop Outlook.—In general, according to the Dominion Bureau of Statistics telegraphic crop reports, the spring season with few exceptions was considerably advanced throughout Canada in comparison with a year ago.

The growing season in the Maritime Provinces was three weeks in advance of last year. With few exceptions clovers and grasses have wintered well and are now making luxuriant growth. Fruit trees have wintered well and the blossom prospect is good. Some sprays have already been applied. Potato plantings are well under way and truck crop planting is advancing.

Except in northern areas, seeding started around the first of May in most sections of Quebec. Cool, wet weather which has prevailed over most of Quebec since the middle of May has slowed field operations and retarded growth. Meadows

and pastures came through the winter in generally excellent condition. Indications are that fairly substantial acreages will be seeded to coarse grains. In the southern sections fruit trees are in full bloom.

Early season indications pointed to promising crop prospects in Ontario in 1949. Fall wheat and fall rye wintered well and only moderate damage to hay and clover meadows has been reported. Cool, dry weather during May had a retarding influence on growth of spring crops, meadows and pastures. About 75 per cent of the intended acreage of spring crops had been seeded by May 7. Increased acreages were indicated for spring grains, sugar beets, corn for husking and flue-cured tobacco while decreases are expected in potatoes and flaxseed. However, as reported by the Dominion Bureau of Statistics on June 14, prolonged drought, accompanied by unseasonable extremes in temperature, has seriously reduced crop prospects in Ontario. Tobacco, soybeans, corn and tomatoes have been particularly hard hit by late frosts, necessitating considerable replanting of these crops. The dry, cool weather and frosty nights have retarded growth of practically all field crops. All tree fruits have a heavy bloom and are blossoming earlier than usual.

Seeding on the Prairies was practically completed by June 8. Widespread rains have considerably improved crop conditions in the West, but rain is still urgently needed in fairly large areas of central Alberta and south-central and south-western Saskatchewan. Recovery from frost damage has been good but some reseeded of coarse grains was necessary in a few districts. In many sections, particularly western, south-western and south-central Saskatchewan and in central and north-central Alberta rain is urgently needed to halt deterioration. Grasshoppers are hatching in many areas but widespread poison spray campaigns are evidently proving quite effective. Despite this, there is still potential danger of serious grasshopper damage, particularly in some parts of central Saskatchewan where heavy losses have already been reported from some localities.

The growing season got away to a slow start in British Columbia this year, but has advanced to the point where it is considered to be about average. Present prospects for hay, grain and forage crops, as well as fruit crops, are excellent.

The index of industrial production reached 184·1 in September, 1948, and held for the next three months between this figure and 185·8 in December. In January, 1949, it dropped to 178·6, by February showed a slight recovery, and by March reached 184·3. This figure is slightly above the 1948 monthly average of 181·5 and considerably higher than the 1947 average of 175·5. The sub-index on the production of motor vehicles, which in January fell to 108·5 from 201·0 in December, recovered to 189·3 in March following brief shut-downs for retooling purposes.

Freight car loadings for the week ending May 21, 1949, totalled 73,500 compared with 74,100 for the previous week and 76,700 in the corresponding week last year.

There was a substantial contraction in employment in the major industrial groups from January to April 1 with the index number standing at 187·6 on April 1, compared with 196·0 on January 1, 1949 and 186·6 at April 1, 1948. This downward movement is in accord with the seasonal trend observed during eight of the last 11 years. The index of employment in manufacturing stood on April 1 at 203·1, almost the same as the March figure and slightly above the April 1, 1948 index of 202·0. Expenditures on weekly salaries and wages in the larger manufacturing establishments rose 0·2 per cent in March and 13 per cent as compared with a year ago when the earnings had been affected by Easter holidays.

The Federal Budget.—The Minister of Finance, in his annual Budget speech on March 22, 1949, announced taxation cuts which included not only curtailment of income taxation but reductions on a large variety of consumer goods and services. The basic income exemptions of \$750 for single persons and \$1,500 for married persons were increased to \$1,000 and \$2,000 respectively. The exemption in respect of children eligible for family allowance was raised from \$100 to \$150, and for other dependents from \$300 to \$400.

Cost-of-Living.—Since September 1, 1948, the cost-of-living index has remained relatively steady, ranging between 158·9 and 159·6. During the first quarter of 1949 the index number declined slightly. However, by April 1, 1949, there was a slight reversal in the trend. The cost-of-living index moved up one-tenth of a point between March 1 and April 1, from 159·2 to 159·3. At this figure, it was 7·7 points above April 1, 1948, and three-tenths of a point below the peak level of 159·6 which has been reached three times—at the first of October and November, 1948, and January, 1949.

The increase during the month was due to small advances in clothing, home-furnishings and services, rents and the miscellaneous group, which offset a further drop in foods.

The food index declined in the period from 199·1 to 198·5, a substantial drop in the price of butter and small decreases in lard and shortening over-balancing price increases of beef, pork, milk, bread and flour. At the April 1 level the food index was 11·7 points higher than a year ago, but 6·9 points below the peak of 205·4 reached on October 1, 1948.

The clothing index registered a further slight increase, from 182·7 to 183·2, which compares with 172·9 on April 1, 1948, and the home furnishings and services index moved up from 167·9 to 168·0, the fuel and light index remained unchanged at 131·0, while the index of miscellaneous goods and services advanced from 128·1 to 128·4, reflecting an increase in the automobile transportation series.

Prices.—Continuing the downtrend recorded in January and February, a further slight decline was shown in wholesale prices in Canada during March, according to the general wholesale index released by the Dominion Bureau of Statistics. The index was down 0.6 points from February and 2.1 points from the high reached in December, but 8.6 points above the April, 1948, index.

The index for April, 1949, on the base 1926=100, stood at 157.5 as compared with 157.6 in March, 158.1 in February, 159.6 in December and 148.9 in April, 1948. As compared with the preceding month, decreases were recorded for all indexes with the exception of wood and iron products. Textile products remained unchanged.

Prices received by farmers for their agricultural products continued to decline. The index number of farm prices of agricultural products (1935-39=100) for March, 1949, is 251.2 as compared with 257.3 for January. This decline for the month of March is a continuation of a general downward trend in the index which began in September, 1948, except for the month of December. The drop in the March index is due to lower prices for dairy products and poultry and eggs.

Prices paid by farmers as recorded in January, 1949, showed a slight decline. This was due to the seasonal drop in wage rates. Thus, the Dominion composite price index of commodities used by farmers, inclusive of living costs, declined 2.4 points between August, 1948 and January, 1949. The index (1935-39=100) for January, 1949, however, was well above the level of January, 1948—being 12.0 points higher (187.7 and 175.7). The decline was more marked in Western Canada than in Eastern Canada.

For all of Canada the index of farm wage rates fell from 398.4 for August, 1948 to 352.2 at January, 1949, but was still considerably above the level of 337.8 for January, 1948. On the other hand, farm operating equipment and materials rose to 180.3 compared with 176.7 and 169.8, respectively, for August and January, 1948. Farm family living costs advanced slightly from 169.5 for August to 171.8 for January 1949.

In comparing the farm prices received to farm prices paid ratios between August, 1948 and January, 1949, the farm prices received showed a greater decline.

Decontrol.—The Dominion Government at the end of March, 1949, authorized the Wartime Prices and Trade Board to withdraw price ceiling orders on flour, bread, butter, sugar and molasses, and on those fruits and vegetables which are not limited in supply by the operation of the present import restrictions. Concurrently, the subsidy of 46.5 cents a bushel which was paid since August 1, 1948 on wheat going into domestic consumption in Canada was withdrawn.

Farm Income.—Net income of Canadian farmers from farming operations in 1948 reached a total of \$1,693,315,000, the highest figure recorded since the publication of comparable statistics back to 1938, and well above the net income of \$1,234,909,000 for 1947, and of \$1,161,395,000 for 1946.

Farm cash income from the sale of farm products also established an all-time high record of \$2,449,865,000 last year as against \$1,962,276,000 in the preceding year, and there were further increases in the value of home-consumed farm produce. The decrease in the value of the year-end change of farm-held live stock inventories more than offset some increase in the value of year-

end changes of farm-held grain inventories, but it was insufficient to offset the gains in cash income and income of kind, the result being that gross income for 1948 also set a record.

Farm operating expenses during 1948 continued their upward climb. From \$968,372,000 in 1947, they increased to \$1,083,556,000 last year, a gain of nearly 12 per cent. While gains were registered for nearly all of the expense items, the most significant increase occurred in livestock feeds, which rose by approximately \$45,000,000 or about 19 per cent.

With the exception of British Columbia, all of the 1948 provincial net incomes were larger than in 1947, while compared with 1946, net incomes were lower in Nova Scotia and British Columbia. Greatest absolute gain in net income in 1948 as compared with 1947 occurred in Saskatchewan.

Exports.—The Minister of Trade and Commerce, on May 9, announced the new additional purchases planned by the United Kingdom. These include canned salmon and timber, as well as flour, apples and fruit pulp.

A quantity of 400 thousand tons of flour is to be shipped during the crop year 1949-50. This amount, which is somewhat less than that supplied by Canadian millers last year, is 100 thousand tons above the minimum amount provided for in the Canada-United Kingdom Wheat Agreement. It is about double the pre-war level of Canadian flour shipments to the United Kingdom.

The United Kingdom have agreed to make a token purchase of Canadian apples, the details of which are still to be worked out. They have also offered to buy a small quantity of fruit pulp now held by the Canadian Government.

Canada's total domestic exports rose in value in April to \$237,800,000 from \$212,300,000 in April last year and from \$216,800,000 in March, 1949. The cumulative value for the first four months of the year was \$896,600,000 compared with \$884,400,000 in 1948.

Further gains in the value of shipments to the United States over last year were recorded during March and April, according to returns released by the Dominion Bureau of Statistics and sharp increases in exports to the United Kingdom, India and Pakistan. There were moderate gains in shipments to European and Latin American countries.

Exports to the United States for the first four months of 1949 were \$455,804,000 as against \$421,553,000 a year earlier. Total exports to the United Kingdom for this period were \$202,484,000 as compared with \$220,143,000 a year ago. There was a general decrease in the value of exports to European countries in the first four months from \$90,238,000 to \$62,051,000.

Among the individual commodities there were gains in wheat, other grains, rubber, seeds, cattle, newsprint, farm implements, copper, lead, nickel, zinc and fertilizers. Asbestos exports were down sharply, as well as coal, bacon and hams, planks and boards, and wood pulp.

A STUDY OF THE FARM BUSINESS IN SOUTHEAST SASKATCHEWAN, 1948

GORDON HAASE

The present study extends the investigation of the farm business in Saskatchewan into a well stabilized section of the Black Soil or Park zone of the province. The area studied comprises a block of ten rural municipalities in the southeast part of the province, adjacent to the Manitoba boundary on the east and the Qu'Appelle river on the north. This particular area was chosen because, first, it is considered to be similar in soil, climate and general type of farming adapted to a large area in the Black Soil zone, and at the same time experienced typical crop yields for the survey year. Second, the area coincides with Saskatchewan Agricultural Representative District No. 5. It is hoped that some of the information obtained may be useful in the expanding land-use and other programs that are developing on the basis of these districts.

The black soils of the area vary in texture from light loams to relatively heavy silt loams and silty clay loams. The topography is fairly level to undulating, with a tendency towards sloughs and poor drainage in many places. Only small parts of the area, mostly associated with the Qu'Appelle river and Pipestone creek, are too hilly for cultivation. The long-time average rainfall for the area is between 12 and 13 inches, and the wheat yields in the area for the 30-year period prior to 1947 averaged 15.6 bushels per acre.

The purpose of the study was to gather information relative to land utilization and other aspects of farm organization and operation as these have developed in the area. Within the overall scope of the study, the specific purposes of the article are:

1. To indicate the patterns of land use, tenure and farm size for the area;
2. To inventory the land, labour and capital resources of the area and indicate the levels of income and family living that are being provided;
3. To examine the relative efficiencies of the different sizes and types of farm units;
4. To indicate the financial progress of the farm operators.

Data for the study were obtained from two main sources. Conditions of ownership and occupancy for each parcel in the area were obtained from municipal officials. This information showed the situation with regard to size and tenure for each farm unit. Data relating to the farm business were obtained directly from farm operators by personal interview. Farms visited were chosen at random from well-defined size and tenure groups and the resulting stratified sample comprises about one-eighth of the total farms in the survey area.

Table 1.—Land Utilization on a Sample of 323 Farms Carlyle-Moosomin, Saskatchewan, 1947-48

Use	Average per Farm	Per cent of Cultivated	Per cent of Total
	acres	per cent	per cent
Wheat.....	66	24.2	
Rye.....	1	0.5	
Barley.....	38	14.0	
Flax.....	10	3.6	
Oats.....	52	19.2	
Temporary idle.....	2	0.8	
Other crops.....	7	2.6	
Summerfallow.....	93	34.0	
New breaking.....	3	1.1	
Total cultivated.....	272	100.0	53.8
Total acres farmstead.....	7		1.4
Total unimproved acres.....	232		45.3
Total assessed acres.....	511		100.0

Land Utilization.—Slightly more than half the total area of the farms in the sample was under cultivation in 1947. The proportion of cultivated land, as well as its distribution among the various crops, is shown in Table 1.

Tenure and Farm Size:—About 66 per cent of the farm units in the area were fully owned by their operators. Only about 10 per cent of the units were fully rented and the remaining farms included some rented land. Distribution of farms according to size is shown in Table 2.

Table 2.—Size of Farms in Ten Rural Municipalities, Carlyle-Moosomin, Saskatchewan, 1947-48

Number of Quarters	Number of Farms	Per cent of Total
1-2.....	1,074	38.82
3-4.....	1,071	38.69
5-6.....	378	13.66
7-8.....	158	5.71
8 plus.....	67	2.40
Non farm units.....	20	0.72
Total.....	2,768	100.0

Farm Capital, Labour and Income.—In 1947, the average size of the farms included in the sample was 512 acres. This average size represented a total investment in land, supplies, livestock and machinery of \$16,714. Of this total, land accounted for 58.1 per cent; feed, seed and other supplies, 4.5 per cent; livestock, 15.2 per cent and machinery, 22.2 per cent. The labour used amounted to 1.56 man-equivalents,¹ giving a capital-labour ratio of \$10,670 per man-equivalent.

In terms of income provided during the same period, an average of \$1,420 per farm was paid out for cash family living expenses in 1947. After this allowance, the returns to capital and family labour provided an average net income of \$176. In addition to these amounts, the average farm provided perquisites to the value of \$811 in the survey year.

Analysis of Size of Farm.—In a normal year, the financial returns from farming are closely related to the size of the farm unit. Despite generally typical yields in 1947, however, the small farms in this study were in a relatively unfavourable position in regard to income. In that year, farms having less than 200 acres under cultivation had on the average a negative net income, indicating that a portion of family cash living expenses was not met out of current income. The relationship of farm size to living expenses, net income and value of farm perquisites is shown in Table 3.

Table 3.—Relation of Farm Size and Income on 328 Farms, Carlyle-Moosomin, Saskatchewan, 1947-48

Cropland	Family Cash Living Expenses	Net Income for Farm	Value of Farm Perquisites
		—dollars—	
0-99.....	694	-147	576
100-199.....	1,101	-311	727
200-299.....	1,345	12	805
300-399.....	1,623	422	863
400-499.....	1,814	977	936
500 plus.....	2,469	1,201	1,035

¹ One man-equivalent represents the work of one man on the farm for 12 months.

Certain aspects of farm organization change as size of farm increases and result in an increased efficiency that contributes to the larger financial returns obtained on these farms. The ratio of capital to labour and, particularly the ratio of farm machinery to labour, is significant in this regard, reflecting an uneconomic substitution of labour for capital on the smaller units. The ratio of machinery investment per man-equivalent, for example, ranges from \$1,460 on farms with less than 100 cultivated acres, to \$3,710 for farms having 500-599 cultivated acres.

Closely allied to capital use in determining farm efficiency is the factor of labour efficiency. The productivity of labour is ordinarily directly proportional to the amount of capital (including land) with which it is combined. Thus while labour inputs increase with size of farm, inputs of capital have increased at a more rapid rate, and labour efficiency, measured, say, in acres of cropland per man-equivalent, has increased accordingly on farms in this area. The relationships between size of farm, labour efficiency and level of capital use are shown in Table 4.

Table 4.—Measures of Efficiency in Their Relation to Farm Size, Carlyle-Moosomin, Saskatchewan, 1947-48

Size of Farm, Acres Cultivated	Man-Equivalents	Acres of Cropland per Man-Equivalent	Machinery per Man-Equivalent	Total Farm Capital per Man-Equivalent
		acres	—dollars—	
0-99.....	1.2	59	1,460	5,390
100-199.....	1.3	127	1,600	7,820
200-299.....	1.4	188	2,340	10,250
300-399.....	1.7	232	2,610	12,020
400-499.....	1.9	254	2,900	13,850
500-599.....	2.0	322	3,710	13,730
600-699.....	2.7	263	2,830	12,610
700 plus.....	3.1	272	3,120	13,140

Analysis of Type of Farm.—For the sample of farms as a whole, the average farm had 20 animal units, and receipts from livestock sales accounted for 24.8 per cent of cash receipts. The relative importance of the main sources of cash receipts in the survey year is shown in Table 5.

Table 5.—Cash Farm Receipts, Carlyle-Moosomin, Saskatchewan, 1947-48

Item	Receipts	Per cent of Total
	dollars	per cent
Wheat.....	1,044	26.3
Other crops.....	1,116	28.1
Cattle.....	691	17.4
Other livestock.....	294	7.4
Farm produce.....	265	6.7
Other farm receipts.....	561	14.1
Total Farm Receipts.....	3,971	100.0

On the farms included in this survey, there is a unique relationship between farm size and type of farm. Where commercial farm type may be defined in terms of the relative importance of the livestock enterprise, it may be shown that the relative importance of livestock decreases as farm size increases.

Table 6.—Relation of Farm Size to Type of Farm, Carlyle-Moosomin, Saskatchewan, 1947-48

Size of Farm, Acres of Cropland	Animal Units Less Horses per 100 Acres Cropland
0-99.....	26
100-199.....	11
200-299.....	8
300-399.....	6
400-499.....	7
500-599.....	5
600-699.....	9
700 plus.....	2

This relationship between farm size and farm type tends to obscure any relationship between type and income. The effect of type of farm must then be sought within the respective size groups. For the sample of farms in this area, however, the relative importance of the livestock enterprise shows no consistent relation to farm income within specific size groups. This merely suggests that within a given size range the livestock adaptation does not show a consistent advantage over those farms relying mainly on grain sales for cash income. It is quite possible however, that each type is properly adapted with respect to other determinants of type. The relationship between farm size, farm type and farm income are shown in Table 7.

Table 7.—Relations of Farm Size, Type and Net Income, Carlyle-Moosomin, Saskatchewan, 1947-48

Acres Cropland	Animal Units/100 Acres Cropland			
	0-9	10-19	20-29	30 plus
	—income in dollars—			
0-199.....	-303	-319	-77	-165
200-399.....	-231	449	82	.....
400 plus.....	63	1,562	75	.....

Financial Progress.—The average gain per year in net worth has often been taken as a measure of the financial progress of the farm operator. In this study, the financial progress of the operator has been related to the period of his operation of the farm. It will be noted that the group who have begun operating their farms within the last five years have made conspicuously faster gains than all other groups, and that in general the longer the period of operation the smaller has been the annual gain. In the past few years, a considerable number of farms in the area have been passed from father to son, often on very favourable terms. Three or four years of good yields and prices have combined to enable this group to show very favourable progress. Longer periods of operation reflect the depressed conditions of the 1930's. At the same time, it is not possible to keep the time factor out of the respective valuations that are involved in comparisons of net worth between time periods. In this respect, operators who began farming five to ten years ago have experienced a considerable increase in net worth merely from the increase in the price level during that time. On the other hand, those operators who began farming in the World War I period present a

Table 8.—Average Annual Changes in Net Worth, Carlyle-Moosomin, Saskatchewan, 1947-48

Number of Years on Farm	Changes in Net Worth per Year
	dollars
0-5.....	3,910
6-10.....	1,670
11-15.....	1,120
16-20.....	940
21-25.....	640
26-30.....	600
30 plus.....	590

comparison between two periods of relatively high prices, and the gain in the physical assets of the farm is not obscured so by changes in the value of money. These considerations are reflected in the changes in net worth shown in Table 8.

FAMILY LIVING IN 75 FARM HOMES IN SOUTHEASTERN SASKATCHEWAN

MARGARET A. MACNAUGHTON

What kind of living does the farm business provide for the family it supports in the Carlyle-Moosomin area of southeastern Saskatchewan? How do such families spend their income? Are they as well off as other farm families in the province? How do their facilities compare with those of their urban neighbours? What do they do in their leisure time? Do they like living on a farm?

In order to give some indication of the direction of replies to these questions, supplementary level of living information was obtained for 75 of the families interviewed in a farm business study¹ of 10 rural municipalities in southeastern Saskatchewan for the year June 1, 1947 to May 31, 1948. The level of living sample was selected in conformity with the farm management sample and with the population in each of the sample strata.

The Typical Operator.—The typical operator, on the farms selected, was about 45 years of age, of British origin and had a grade eight education. His wife was of British origin also and there were 4.0 persons in his family. He owned and farmed from three-quarters to one section of land.

Where Does the Money Go?—His family living expenditure was valued at \$2,277, one third of which was provided from the farm. This outlay was larger than that in either west, central or northern Saskatchewan the previous year which was \$1,887 and \$1,596 respectively.² Food was the largest expenditure item—sixty per cent of it was grown or produced on the farm.

In 1948 the outlay for food and clothing of the 75 families studied took forty-one per cent of the total cash living expenses. When values of farm furnished goods were included, it was found that food and clothing made up one-half of the total value of living.

About forty per cent of the *total* value of family living was allocated to food, twenty-two per cent to operational expenses, twelve per cent for clothing, eleven per cent for education and recreation, only four per cent on health, and the remainder, little more than ten per cent, was spent for furnishings, personal and miscellaneous expenses.

¹ *A Study of the Farm Business in Southeast Saskatchewan, 1948*, by Gordon Haase.

² MacNaughton, M.A. and Andal, M.E., *Changes in Farm Family Living in Three Areas of the Prairie Provinces from 1942-43 to 1947*. Publication 815, Technical Bulletin 69, Economics Division, Dept. of Agriculture, (February 1949).

Out of every dollar of *cash* living expenses, 24 cents were spent on food, 17 cents on clothing, the same on education and recreation, 15 cents on operation, 10 cents on furnishings, 6 cents on personal, the same on health and the remaining 5 cents on miscellaneous items.

Level of Living.—The average level of living score¹ was 17·8 out of a possible 27. This was about the same as in the west central Saskatchewan the previous year but higher than the score of 11·2 in the North. However, there were only three-quarters as many families with scores of 20 or more in south-eastern Saskatchewan in 1948 as there were in west central Saskatchewan in 1947.

Well Built Houses Lack Conveniences.—The majority of farm homes studied were of frame construction, forty per cent of which were unpainted. They averaged 5·1 rooms each, thus allowing for one or more rooms per person for sixty-eight per cent of the families. In an area which has severe winters, heating and insulating are a major consideration. Most of the homes had some storm windows and the majority had heaters in addition to the cook stove; only one-quarter of the homes had central heating. Every home had a basement, sixty per cent of the basements extended under the whole area of the house and most of them were "improved".

The interiors of the homes were, on the whole, well finished, with woodwork all painted or varnished, softwood floors, the main rooms being covered with linoleum, the living room walls finished with painted or papered plaster or plasterboard.

Running water and bathtubs are still dreams in most of these prairie farm homes. Most of the water for the house is still pumped from the well by hand and carried to the house. Only one family had running water—five were still using ropes and pulleys. Septic tanks and flush toilets were non-existent, although fifteen per cent of the families had bathrooms.

Although wick lamps are the only source of light in just two homes, the majority use mantle lamps; only one family in eight has electricity. Almost fifty per cent of the families have power washers, but fourteen per cent of the housewives still do the family wash by hand. Only six per cent of the houses have mechanical refrigeration, eighty per cent haven't any at all. Some items

Table 1.—Comparison of Percentage Possessing Household Conveniences in the Study Group and the City of Regina

	Regina, 1946		75 Families in South Eastern Saskatchewan, 1948
	—per cent—		
Radio.....	93		99
Telephone.....	66		77
Auto (passenger).....	27		77
Electricity.....	99		12
Running water.....	84		1
Central heating.....	80		24
Bathtub or shower.....	77		12
Refrigeration.....	58		20

¹ A level of living scale for rural Western Canada was developed by Miss F. M. Edwards, *A Scale for Rating Socio-Economic Levels in Western Canada*. It provides a measure which reflects the long-term accumulation of material and cultural possessions and participation of family members in group activities and relates them to the "prevailing average" standards of those of the entire population in the district in which interviews were made. This measure of level of living includes the use of goods purchased in past years as well as the use of newly purchased goods and services. Miss Edwards's scale included 27 items. The levels shown by scores on these items are relative; the highest possible score is 27.

common to the majority of homes are: radio—99 per cent; sewing machine—91 per cent; dining room table—95 per cent; dining room buffet or china cabinet—89 per cent; chesterfield—64 per cent; easy chair—72 per cent.

Farms Have More Cars, Radios and Telephones than Urban Neighbors.

—Although these families in southeastern Saskatchewan were lacking many facilities for their homes that are common in urban centres, they had more radios, cars, and telephones, on the average, than families in the city of Regina. Table 1 compares facilities in this rural area with the latest census figures for the city of Regina.

How Far To Schools, Doctors and Churches?—Although most community facilities were beyond easy walking distance, almost ninety per cent of the farm families had a car or truck and fifty-five per cent of the farms were on a gravel road. Fifteen per cent of the farms were, however, more than 3 miles from a gravel road.

Only seventeen per cent of the farm houses were less than a mile from a grade school, but the majority were under three miles. Farm homes were, on the average, around five miles from a shipping point, church or community hall. Medical facilities were farther away. Only twenty-seven per cent of the farm families had a doctor within five miles. Doctors were, on the average, about nine miles away, hospitals averaged fourteen miles.

How Is Leisure Time Spent?—When not at work, farm families listen to the radio, read, work at their hobbies, take part in community organizations, attend movies and social gatherings, or just visit in neighbouring homes much as their urban friends and neighbours do. However, their preferences and interests may have a different emphasis.

Radio Listening.—The most popular types of radio programs, in the 75 families interviewed, are: first—news and weather reports; second—music (old time first, then modern, then classical); third—drama; fourth—farm information; fifth—comedy and variety; sixth—serials.

Reading.—Most of the farm family reading is confined to farm and local papers and magazines. Only two families were without a farm paper and sixty per cent were getting three or more. Judging from the number of subscriptions received the following were the most popular farm papers: Free Press Weekly Prairie Farmer, Country Guide, Western Producer, Saskatchewan Farmer and the Family Herald and Weekly Star. About one-half of the families subscribe to a weekly newspaper, usually a local one. Sixty per cent of the group subscribed to at least one magazine and half of these received two or more. Only seven families received a daily newspaper and only one-half of the group had more than 25 books in their homes including children's books. Seventy-one per cent of the group reported that there were no library facilities available to them in their community and only twenty-one per cent of the whole group were making use of what facilities there were. Altogether, the 75 families studied made an average outlay of \$14 for books, magazines and newspapers during the survey year. Payments made in earlier years for current subscriptions were not included.

Hobbies.—Only one-quarter of the operators and one-half of the women stated that they had hobbies. Almost every operator had a different one, but most of them hinge on some special phase of farming. Most of the women did handwork of some kind, knitting, crocheting, tatting or embroidery. A musical instrument was played by some member of the family in forty-five per cent of the homes.

Clubwork.—Twenty per cent of the 75 families studied in southeastern Saskatchewan did not participate at all in clubs or organizations in the community. The majority of families did, however, have at least one member participating. More housewives than operators were active in clubwork as sixty per cent of the former and less than one-half of the latter belonged to an organization. More men were acting on school boards or taking part in co-operatives than anything else. Church organizations and homemakers' clubs attracted the most women.

Social Participation.—Almost ninety per cent of the families visited in this region of southeastern Saskatchewan attended church or Sunday school but less than half of the group attended more than 20 times a year. One-third of the families in the area did not attend dances and about one-half of those who did go went less than twelve times a year. Four-fifths of the families went to movies, about one-quarter of these going more than 20 times a year. About one-quarter of the 75 families studied attended at least one fair, and usually the whole family was included in the outing. Only three families attended any educational meetings such as farm radio forums or showings of audio-visual films. Less than a third of the families had members attending athletic events and most of those who did, were at less than 12 during the year. There was considerable informal visiting done, eighty per cent of the families having visitors more than 20 times a year. Although families were not able to visit away from home quite as much, almost two-thirds visited more than 20 times and very few were not able to get away at least 12 times.

Farm Versus Town or City Living.—Thus having described the general pattern and level of family living in the 75 farm homes of southeastern Saskatchewan, one might ask the question, do these families like living on a farm? What do they feel are their most urgent needs? Operators and young people were not consulted but when the housewives were asked to state specifically, what they needed most that they were now without—ninety per cent of them mentioned home improvements of some kind and thirty-five per cent mentioned home conveniences. The most sought-after improvement was electricity, then running water and then a bathroom and fixtures. The convenience needed most was a washing machine. Housewives were also asked whether or not they liked living on a farm. Only four of them actually disliked farm life and would rather live in town. They were resigned to staying however as other members of the family were happy there. Although the remainder liked living on a farm about one-third had some reservations. Most of these dealt with the lack of conveniences and facilities in the farm home. Aside from this and the hard work involved in life on a farm, the most common complaint in this area was about bad roads causing isolation, particularly in the winter. The items which counter-balance these drawbacks for those who liked living on a farm were, its independence and freedom and the security and saving involved, particularly with a large family, in being able to produce so many of the necessities of living right on the farm. The women also felt that a farm was a much better place than a city to bring up children. They liked the quiet atmosphere and some enjoyed gardening and outside work.

Altogether then, the 75 housewives interviewed, with the above-mentioned reservations about lack of conveniences, hard work and isolation in the winter, felt that they had most of the things they needed and preferred the pattern and level of farm living to that of a town or city.

THE DAIRY FARM BUSINESS IN EASTERN ONTARIO 1947-1948

G. P. BOUCHER and D. J. PACKMAN

Dairying is the basic enterprise on Eastern Ontario farms. On its sound organization and management depend the financial success of the farm business as a whole.

With a view to obtaining detailed information relating to the farm business in that district, the Economics Division of the Dominion Department of Agriculture conducted a farm business survey during the summer of 1948. A sample of 187 farms was selected from 300 farms visited by the same Division in 1937 and 1938. That type of sample selection should also help in making comparisons with regard to changes in organization and adjustments to economic changes. The main purpose of the present article is to present a picture of the variations in management patterns among these three groups of farms in 1948.

For analytical purposes, the farms have been divided into three groups according to their main marketing outlet for milk. Of the 187 farms studied, 83 sold the larger part of their milk to cream and cheese factories, 41 to milk processing plants and 63 to whole milk distributors. The bulk of the whole milk farms was in Carleton County, in the general area of Smiths Falls and Perth and the northwestern part of Lanark County.

The manufactured milk farms were scattered over the southern part of Leeds County, the general area of Smiths Falls, and the northwestern part of Dundas County around Chesterville.

Most of the cream farms were interspersed with the whole milk farms of Lanark County and the cheese farms were concentrated in the northeastern part of Dundas County and the northwestern part of Russell County.

Description of the Areas.—The nine easternmost counties of Ontario were included in the study. These counties form a rough easterly wedge between the Province of Quebec and the State of New York, being bordered on the north by the Ottawa River, on the south by the St. Lawrence River, and on the east by the County of Vaudreuil-Soulanges, in the province of Quebec.

Most farms in this district obtain the largest part of their revenue from the sale of dairy products. According to the 1941 Census, forty per cent of their farm revenue was derived from the sale of dairy products, eleven from the sale of cattle, ten from the sale of hogs, seven from that of eggs and poultry, and the remainder from a variety of sources. These farms are well located for dairy production, being close to the large urban centres of Ottawa and Montreal and enjoying comparatively advantageous conditions of climate, soil and topography.

Land Use.—Whole milk farms were the largest in size with an average of 226 acres per farm as compared with 214 acres for manufactured milk farms, and 181 acres for cream and cheese farms. The proportion of improved land, however, presents a somewhat different picture since improved land made up 53.6 per cent of the total farm area on whole milk farms, 47.8 on manufactured milk and 55.2 per cent on cream and cheese farms.

The cropping system was very similar in all three groups with respect to the types of crops grown and the degree of emphasis given to various crops. Hay was the most important, occupying fifty-seven per cent of the total crop land. Oats, the next most important crop occupied seventeen per cent of the total crop land and was followed by mixed grains with six per cent.

The main difference in cropping systems was in the degree of importance given to the production of corn. On the cream and cheese farms 5.2 per cent of the total crop area was in corn, on manufactured milk farms 9.6 per cent,

and on whole milk farms 10.9 per cent. The acreage devoted to the production of buckwheat was greater than usual in 1948 due to the heavy spring rains. Some farmers seeded their lower land to buckwheat as an emergency grain crop.

Farm Capital.—The total capital investment averaged \$24,039 per whole milk farm, \$17,148 per manufactured milk farm and \$16,233 per cream and cheese farm. When this total capital is divided into its various components, real estate, livestock, equipment and machinery, feeds and supplies, the whole milk farms also have the largest averages for every one of these components.

The average value of the land was \$5,964 per whole milk farm, much lower at \$3,581 for manufactured milk and \$4,307 for cream and cheese farms. The lower average value for the second group is also reflected in the proportion which investment in land makes of total investment. In that group, it represents 42 per cent whereas it accounts for 46 and 48 on the whole milk, and cream and cheese farms respectively. A lower investment in land constitutes a definite handicap towards obtaining a higher farm income since land represents the basic factor of animal and crop production.

The tendency for the farms with the highest annual cash income to have a larger investment in buildings is well reflected by the relationship between investment in farm homes and other buildings and annual cash receipts for the three farm groups. The whole milk farms had the highest cash receipts and an average investment of \$3,875 per farm house and \$3,207 for other buildings. The manufactured milk farms, on the other hand, had an average investment of \$2,637 per house and \$2,417 for other buildings, whereas the comparative figures for the cream and cheese farms were \$2,612 and \$2,104 respectively. For all three groups, buildings represented about 29 per cent of the total capital investment and the average investment in houses was a little larger than that in other buildings.

The average investment in livestock ranged from \$4,492 per cream and cheese farm to \$6,743 per whole milk farm. The comparatively low investment in land on manufactured milk farms was somewhat compensated by an average investment of \$5,553 in livestock per farm. The proportion which livestock represents of total farm capital was approximately 30 per cent for all three farm groups taken together and approximately 28 for whole milk, and cream and cheese farms, and 32 for the other group.

Machinery and equipment represented an average value of \$3,926 per whole milk farm, \$2,956 per manufactured milk, and \$2,431 per cream and cheese farm. The corresponding figures for the proportion of total capital which this represents are 16.3, 17.0 and 15.0 per cent respectively.

Livestock.—Whole milk farms maintained an average of 21 milk cows, manufactured milk farms 16, and cream and cheese farms 14 milk cows per farm. Holstein dairy cattle were by far the most popular breed in all three groups. Eighty-one per cent of all herds were Holstein and the remainder belonged to the Ayrshire, Shorthorn and Jersey breeds. Thirty-five per cent of the farms maintained pure-bred herds and of these, 83 per cent were Holstein. Milk production averaged 6,261 pounds per cow on whole milk farms, 5,367 pounds on manufactured milk farms, and 4,669 pounds per cow on cream and cheese farms during the year 1947-48.

Approximately 90 per cent of all farms kept a herd bull. Although only ten per cent of the farms relied entirely upon artificial insemination units for breeding purposes, there were many other farms where artificial breeding methods were used on part of the herd.

Only one of the farms included in the survey did not report the use of horses for farm work. The majority of the other farms kept two horses to supplement the work done by the farm tractor. On farms without a tractor the operator generally kept three horses. Very few farmers found it profitable to raise colts for sale.

On the majority of the farms studied, hog production was a side-line activity. Hogs represented an average of about seven per cent of the livestock population, on all three groups of farms on May 31, 1948. Sixty-one per cent of all farms kept an average of two brood sows per farm. The whole milk farms sold the greatest number of hogs per farm during the year 1947-48 with an average of 26.6 hogs marketed per farm. Cream and cheese farms sold an average of 18.2 hogs while the manufactured milk farms reported sales averaging 15.2 hogs per farm. A few farmers preferred to purchase sucklings rather than to keep a brood sow. Most of the hogs raised by these farmers were for consumption in the home.

Sheep were kept on only 24 farms. The abundance of rough pasture on some cream and cheese farms in Leeds, Lanark and Grenville Counties made it possible to maintain an average of nine breeding ewes on these 24 farms.

Poultry production was an integral part of the livestock enterprise on all three groups of farms; but the greatest concentration occurred on manufactured milk farms where farmers kept an average of 265 birds per farm. The flocks averaged 260 hens on manufactured milk farms, 128 on whole milk and 136 on cream and cheese farms. Forty-seven per cent of all farms purchased day-old chicks, 22 per cent purchased mature layers and the other farms raised the birds required to replace those sold or consumed during the year. Ducks, turkeys and geese were not kept in very large numbers. Some farmers also included bees and foxes in their livestock program; this practice was more common on cream and cheese farms.

Cash Receipts.—Cash receipts from the sale of milk, cream, butter, eggs, and other livestock products formed the most important source of cash income. On whole milk farms, receipts from these sources averaged \$4,451 or 63 per cent of the total cash receipts per farm; on manufactured milk farms they averaged \$2,916 or 54 per cent, and on cream and cheese farms they averaged \$1,808, or 45 per cent of the total cash receipts per farm. Sales of eggs were comparatively large on manufactured milk farms with an average of \$606 per farm which represented 21 per cent of all livestock products sold from those farms.

Livestock sales constituted the second largest source of cash income. They averaged \$2,040 on whole milk farms, \$2,106 on manufactured milk, and \$1,693 on cream and cheese farms. The relative importance of livestock sales ranged from 42 per cent of all cash receipts on cream and cheese farms to 39 per cent on manufactured milk and 29 per cent on whole milk farms. The strong demand for dairy cattle, particularly for shipment to the United States, was responsible for a large part of the total cash receipts from the sale of livestock.

Receipts from crop sales were of much smaller importance. Inclement spring weather in 1947 resulted in low crop yields on most farms, and farmers were thus able to sell only small quantities of grain or hay. The largest receipts came from the sale of hay and these were followed by sales of oats, field beans and field peas. Two farms in Carleton County derived a large part of their income from the sale of registered and certified barley and oat seeds. On whole milk farms, crop sales accounted for five per cent of the cash income whereas on manufactured milk, and on cream and cheese farms, they represented three and seven per cent respectively.

Miscellaneous cash receipts such as those resulting from work off the farm, the sale of wood, lumber, and maple syrup amounted to \$187 per farm on whole milk farms, \$131 on manufactured milk and \$173 on cream and cheese farms.

A considerable difference was revealed between total cash receipts on whole milk, and on cream and cheese farms. The average per farm was \$7,044 in the first group and only \$3,995 in the second group. On manufactured milk farms total cash receipts averaged \$5,368 per farm.

Current Expenditures.—A farm business which revolves around the dairy enterprise entails considerable expenditures particularly for labour and livestock feeds. On whole milk farms, the average expenditures on feeds represented \$1,922 per farm and on manufactured milk and cream and cheese farms the same type of expenditures represented \$1,406 and \$1,016 respectively.

Labour costs were divided into cash costs of hired labour, board of hired labour, and estimated values of unpaid family labour. A considerable amount of labour was hired to supplement the work of the farm operator and his family. In many cases employees were hired by the month or the day rather than on a yearly basis to meet the peak loads at harvest time. The cash outlay for hired labour ranged from an average of \$249 per farm on cream and cheese farms to \$325 on manufactured milk and \$540 on whole milk farms.

The average cash expenditure for operating the farm tractor on 108 farms reporting a tractor was \$169 per farm. Operating expenses for trucks averaged \$173 per farm on the 37 farms reporting trucks, and automobile expenditures averaged \$156 per farm for the farm share of the costs on the 162 farms reporting automobiles. The operating expenses shown above include expenditures for gas, oil, licence, insurance, and tires but do not include the costs of repairs and depreciation.

The pattern of current expenditures showed a trend similar to that of cash receipts. Whole milk farms had the largest expenditures with an average of \$4,567 per farm. For manufactured milk farms, the average was \$3,356 per farm and for cream and cheese farms, \$2,652 per farm.

Capital Expenditures.—On manufactured and whole milk farms the largest capital expenditure was incurred for the purchase of livestock, mainly young dairy cattle, to replenish the herds and maintain a constant milk supply. These purchases averaged \$693 per farm in the whole milk group and \$851 per farm on the manufactured milk farms. Purchases were considerably smaller on cream and cheese farms, the average expenditure representing only \$304 per farm on this group of farms.

A considerable amount of machinery and equipment was purchased during 1947-48. New harvesting machinery was acquired by 22 per cent of the farmers at an average cost of \$420 per farm, and tillage equipment was added to 25 per cent of the farms at an average cost of \$165 per farm. New tractors were purchased by 22 farmers at an average cost of \$1,018 per tractor, and on six per cent of the farms a cash outlay averaging \$670 per farm was made for the purchase of an automobile.

Very few improvements were made to the land. Installation of tile drainage and digging of new ditches were reported on only a few farms. Cash expenditures for the installation of electricity or electrical equipment in farm buildings and for home improvements were reported on almost all farms.

Total capital expenditures averaged higher on manufactured milk than on other farms. They were \$1,494 per farm on those farms as compared to \$1,358 for whole milk, and \$796 for cream and cheese farms.

Financial Summary.—Net farm income, as shown by the difference between cash receipts and cash expenditures, was largest on whole milk farms with an average of \$1,119 per farm. This was more than twice as large as the income for the other two groups, the average income per farm for the manufactured milk group being only \$518 and that for the cheese and cream group being \$547 per farm. This farm income was evidently small and constituted with the cash which farmers had on hand at the beginning of the year, all the money available for personal and family living and savings.

Operator's labour and management earnings averaged \$1,257 per whole milk farm, \$990 per manufactured milk and \$760 per cream and cheese farm. Other measures of earnings show the same corresponding ranks for the three groups of farms. Farmer's labour income—a measure similar to the previous one except for the omission of farm perquisites from receipts—amounted to \$646, \$431, and \$180 respectively.

Management return, the difference between total annual farm receipts and expenses, accounted for an average of only \$141 per whole milk farm. On cream and cheese farms, management had to bear an average deficit of \$236 per farm and on manufactured milk farms, the deficit averaged \$6 per farm. These figures indicate what is left to management after all charges have been deducted from expenses.

Capital return differs from management return only in the exclusion of capital charges from expenses. On whole milk farms, these returns averaged \$1,103 per farm while on manufactured milk and on cream and cheese farms they averaged \$691 and \$413 respectively. When these capital returns are expressed as a percentage of total farm capital, the rates of returns on investment are 4.6, 4.0 and 2.5 per cent for each of the same groups of farms.

In the brief compass of this article, it is impossible to give details relating to variations in earnings between farms producing for the same or different types of markets. To understand fully those factors responsible for successful management one should go beyond the measures of comparative success between groups of similar or dissimilar types of farms. The management factors must also be used to discover the changes in the individual farm business from year to year, to make comparisons with other farms in the same community, to determine the causes of low or high earnings for the various farm enterprises, and to decide on the changes and adjustments necessary to improve the over-all farm business. More specifically, one must study the reasons for differences in capacity and efficiency of the various production factors, the best methods of selecting and combining enterprises, and the results of different cultural, breeding, feeding and other management practices by individual farmers.

There were approximately 62,000 households in Newfoundland and Labrador at the time of the 1945 Census. Of these, 82 per cent consisted of single families with or without relatives, lodgers, servants, etc. Thirteen per cent consisted of households where two or more families were living together while the remaining five per cent were classified as non-family households. The average number of persons per household was 5.1 for Newfoundland as a whole, although the most common household size was four persons.

Preliminary estimates based on a new series indicate that Canada's retail trade for 1948 totalled \$7,276 million, up 10.9 per cent above the total of \$6,563 million for 1947 and 111.7 per cent above the 1941 figure of \$3,437 million. The Dominion Bureau of Statistics 1948 index of retail prices was up 19.2 per cent from the 1947 figure and 54.4 per cent above that for 1941.

QUEBEC BETTER-FARMING COMPETITIONS

A. GOSSELIN and D. FORTIN

Better-farming competitions constitute the main extension agency of the Quebec Department of Agriculture for carrying out its farm management policy. A brief study of various demonstration methods used in the Province of Quebec to induce farmers to follow better-farming practices was published in an earlier article.¹ An appraisal of the effectiveness of these competitions as a means of increasing farmers' efficiency was made on the basis of the change in financial returns within the five-year period during which these competitions were under the supervision of the Department of Agriculture.

In this article the changes in crop and livestock output on farms participating in the competition are used as a measure of progress during the five-year period. The data used for this purpose were grouped on a yearly basis regardless of the time these competitions were held. The figures in each column of the following tables represent the average crop and livestock output of all competitors for any given year of the five-year period.

Yearly averages were calculated from 71 to 73 per cent of the farms participating in these competitions between 1935 and 1941. The five-year averages cover 83 per cent of the competitions which were completed from 1935 to 1942.

A combination of dairy and livestock production is the most common type of farming in Quebec. The production of coarse grains and roughages which are fed on the farm and good pasturage are the key to greater farm efficiency. The aim of better-farming competitions is first to increase the output of these crops. As a second step, livestock output can be efficiently increased only after the soil fertility level has been raised materially. Of course, large increases in forage crop production cannot normally be expected within five years, which is just the time required to complete the first turn of a crop rotation.

Land Use.—The average acreage of tillable land during the five-year period was 80.7 acres per farm, distributed as follows: coarse grains 19.9 acres, forage crops 35.4 acres, potatoes 1.4 acres, other crops 2.6 acres, tillable pasture 21.4 acres. Changes in the total acreage of tillable land and in the acreages of various crops from year to year were very slight. The total crop acreage was 56.5 acres, tillable pasture 25.2 acres and total tillable land 81.7 acres the first year as compared to 60.8, 20.1 and 81.0 acres respectively the fifth year.

Coarse Grains.—The average acreage in coarse grains—oats, barley and mixed grain—on these farms was 21.5 per cent of the total tillable acreage the first year and 25.7 per cent the fifth year, which is an increase of 4.2 per cent (Table 1). There were 17.6 acres in coarse grains per farm the first year and 20.8 acres the fifth year, an increase of 3.2 acres per farm distributed as follows: oats, decrease 0.2 acres; barley, no change; mixed grain, increase 3.4 acres. This shift from straight oats or barley production to mixed grain was a part of the crop program recommended in these competitions. In this way, higher yields of grain are produced on most types of soils. There was an increase of 4.0 bushels oats, 4.8 bushels barley and 9.0 bushels of mixed grain per acre from the first to the fifth year. The increase in production of coarse grains due both to the increased acreage and to higher yields per acre during the five-year period averaged 204 bushels per farm.

¹ Better Farm Management Practices Through Demonstration. *The Economic Annalist*. Feb. 1949. p. 12.

Forage Crops.—On most Quebec farms cured hay, corn fodder and oat straw are still the main roughages fed to cattle and horses. A small area of corn silage and roots is also usually grown to supply succulent feed in wintertime. Pasture supplies the bulk of feed in summertime.

The main objective of the crop improvement program on these farms is to increase the quantity and the quality of hay and pasturage. In recent years a growing number of farmers have added alfalfa and Ladino clover to their grass seed mixtures.

Table 1.—Production of Coarse Grains and Forage Crops per Farm and Yields per Acre, Quebec Better-Farming Competitions

		1st year	2nd year	3rd year	4th year	5th year	Increase or Decrease of Last Year over First Year
Number of farms.....	No.	930	913	983	1,016	898	.....
Oats—							
Acres per farm.....	ac.	12.1	12.4	12.8	11.8	11.9	—0.2
Yield per acre.....	bu.	29.4	31.0	28.1	31.1	33.4	4.0
Total production.....	bu.	356	385	360	367	398	42
Barley—							
Acres per farm.....	ac.	1.9	2.3	2.2	2.0	1.9	0.0
Yield per acre.....	bu.	24.7	27.4	25.9	28.0	29.5	4.8
Total production.....	bu.	47	63	57	56	56	9
Mixed Grains—							
Acres per farm.....	ac.	3.6	5.6	5.7	6.3	7.0	3.4
Yield per acre.....	bu.	26.4	28.9	30.5	31.9	35.4	9.0
Total production.....	bu.	95	162	174	201	248	153
Total acreage of coarse grains per farm.....	ac.	17.6	20.3	20.7	20.1	20.8	3.2
Total production.....	bu.	498	610	591	624	702	204
Hay—							
Acres per farm.....	ac.	32.4	32.8	32.4	32.4	33.7	1.3
Yield per acre.....	ton	1.2	1.3	1.4	1.4	1.8	0.6
Total production.....	ton	40	44	45	46	59	19
Corn fodder and silage—							
Acres per farm.....	ac.	1.4	1.8	1.7	1.9	1.9	0.5
Yield per acre.....	ton	10.8	10.2	10.9	10.3	11.2	0.4
Total production.....	ton	15.1	18.3	18.6	19.5	21.2	6.1
Turnips—							
Acres per farm.....	ac.	0.8	0.8	0.8	0.8	0.8	0.0
Yield per acre.....	ton	17.8	18.8	18.8	18.5	16.8	—1.0
Total production.....	ton	14.2	15.0	15.0	14.8	13.4	—0.8

Hay.—Once a crop rotation has been outlined for a farm with a view to obtaining a more balanced production of various crops, the area devoted to hay crops remains fairly constant from year to year. The increase of 1.3 acres in hay per farm (Table 1) is not very significant, but the increase in yield of 0.6 tons per acre, and the increase in hay production of 19 tons—or 70 per cent—per farm the fifth year as compared with the first year of these competitions is quite significant.

Hoed Crops.—Practically all these farmers have a small acreage in hoed crops—corn fodder or silage, roots and potatoes—either to get a certain supply of succulent feed for the livestock or vegetables for home use. Hoed crops are very useful for cleaning and improving land to be seeded down to grass for hay or pasture.

Corn Fodder and Silage.—The slight increase in acreage of 0.5 acre per farm and the increase in yield of 0.4 ton per acre contributed to the increase of 6.1 tons in corn production per farm.

Turnips.—It is a general practice on these farms to grow a small acreage of turnips as succulent feed for cattle. As this crop requires much hand labour farmers usually give it good attention. This probably explains why the acreage and yield of turnips remained at about the same level during the five-year period.

Potatoes.—The potato crop is not an important one on most of these farms except in the region where potato production is a major farm enterprise and two or three competitions were held. The change in acreage and yield per acre was not significant. The total production of potatoes on these farms averaged 234 bushels per farm the first year and 270 bushels the fifth year, an increase of 36 bushels per farm.

Changes in Output of Digestible Nutrients.—To assess and measure the changes in crop output which occurred on these farms within five years, the total crop production was reduced to a basis of total digestible nutrients and expressed in pounds or tons per farm (Table 2). The total production of digestible nutrients increased from 28.7 tons the first year to 41.1 tons the fifth year, an average increase of 12.4 tons per farm or 43.3 per cent. This increase was mainly due to an increase in hay production.

To get a more complete picture it would be necessary to include in these figures the digestible nutrients production in the form of pasture, but these data are not available. The changes in the carrying capacity of pasture on these farms, measured by the number of animal units per 100 acres, or the number of tillable acres per animal unit, may serve as a measure of progress in the crop and pasture output, since the number of animal units kept on a mixed farm is closely related to the pasture carrying capacity.

Table 2.—Crop Production per Farm in Pounds of Total Digestible Nutrients¹, Quebec Better-Farming Competitions

	1st year	2nd year	3rd year	4th year	5th year	Increase or Decrease of Last Year over First Year
Number of farms.....	930	913	983	1,016	893	.....
Oats.....	8,654	9,359	8,752	8,922	9,675	1,021
Barley.....	1,775	2,330	2,153	2,115	2,115	340
Mixed grain.....	2,996	5,110	5,488	6,340	7,791	4,795
Hay.....	37,076	40,296	40,940	42,228	53,912	16,836
Corn fodder and silage.....	4,530	5,490	5,490	5,850	6,360	1,830
Turnips.....	2,414	2,550	2,550	2,516	2,278	-136
Total per farm.....	57,445	65,185	65,373	67,971	82,131	24,686
Total in tons.....	28.7	32.6	32.7	34.0	41.1	12.4
Index numbers of production.....	100.0	113.6	113.9	118.5	143.2	43.2

¹ Total digestible nutrients percentages of various plants have been taken from Morrison, F.B., *Feeds and Feeding*. Ithaca, New York, The Morrison Publishing Co. 1936.

Livestock Output.—On farms such as those included in these competitions the livestock output is a somewhat better measure of farm efficiency and progress than crop output. Livestock production is not affected to the same extent as crops are from year to year or for a given period of years by the climatic conditions. The changes recorded in livestock output are for milk, pork and eggs.

Milk Production.—The increase in milk production on these farms during a five-year period was due to an increase of nearly one cow per farm and an

increase of 537 pounds of milk per cow. The average increase in milk production per farm the fifth year as compared with the first year of these competitions was 9,858 pounds or 17·2 per cent.

The average number of cows per 100 acres increased from 14·4 the first year to 15·5 the fifth year and the milk output per 100 acres increased by 12,751 pounds.

Swine Production.—While hogs are an important part of the farm organization in the Province of Quebec, pig production fluctuates from year to year to a larger degree than milk production according to variations in supply and prices of feed, and to the relationship of prices of pork and prices of feed. Hog production is not as good an index as milk production to measure the crop output of the farm. Pigs may be raised and fattened almost entirely on purchased feed, while cows are mostly fed on home-grown feed—roughages and pasture. Also, it is not so easy to get into or out of the dairy business as it is to get into or out of pigs and the poultry business. Pork sold annually per farm increased from 2,559 pounds the first year to 3,662 pounds the fifth year, an increase of 43 per cent.

Egg Production.—The average number of hens per farm increased from 55 to 72. The average egg production per hen increased from 95 to 127 eggs and the average production per farm per year from 436 to 763 dozens or a 73 per cent increase during the five-year period.

Carrying Capacity.—The number of animal units kept on a farm or on a given land area may be used as a measure of farm efficiency output. However, to obtain a complete picture it would be necessary to know the quantity of feed purchased. For it is obvious that the livestock output or the carrying capacity of a given area may be greatly influenced by the amount of feed bought off the farm.

The number of animal units per farm (Table 3) increased from 21·3 the first year to 24·2 the fifth year and from 26·0 to 29·9 per 100 acres of tillable land, an increase of 12 per cent in the carrying capacity of these farms within five years. In other words 3·8 acres of tillable land were required per animal unit the first-year of these competitions and only 3·3 acres the fifth year, a decrease of 0·5 acre per animal unit.

Table 3.—Animal Units per Farm and per 100 Acres Tillable Land, Quebec Better-Farming Competitions

		1st year	2nd year	3rd year	4th year	5th year	Increase or Decrease of Last Year over First Year
Number of farms.....	No.	930	913	983	1,016	898	.....
Tillable acres per farm.....	ac.	81·7	80·1	80·6	80·2	81·0	.....
Animal units per farm.....	No.	21·3	22·0	22·5	23·4	24·2	2·9
Animal units per 100 acres.....	No.	26·0	27·5	27·8	29·3	29·9	3·9
Tillable acres per animal unit.....	ac.	3·8	3·6	3·6	3·4	3·3	—0·5
Animal units per tillable acre.....	No.	0·26	0·28	0·28	0·29	0·30	0·04

In conclusion this study of farm efficiency of 950 farms which participated in the 49 better-farming competitions for five years during the period 1929 to 1942 indicates that material progress was recorded when measured in terms of crop output, milk, pork and egg production, and in terms of the tillable land carrying capacity. Of course, as already pointed out, farm output cannot normally be doubled or trebled within five years, particularly in dairy farming since it is a relatively slow process to increase the productivity of land.

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A REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION, MARKETING SERVICE
DEPARTMENT OF AGRICULTURE, OTTAWA

Published by Authority of the Right Honourable James G. Gardiner, Minister of Agriculture



ANNUAL AND MONTHLY INDEX NUMBERS

WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year	Wholesale Prices 1935-39=100			Farm Prices of Agricultural Products 1935-39=100	Commodities and Services used by Farmers (a) 1935-39=100		Cost of Living 1935-39=100	
	Farm Products (b)	Field Products (c)	Animal Products (d)		Equip- ment and Materials (f)	Eleven Factor Index (g)	Farm Living Costs (a) (h)	Urban Living Costs (i)
1913					85.4		80.1	79.1
1914					90.2	85.3	82.3	79.7
1915					96.9	91.6	86.5	80.7
1916					101.7	100.5	93.7	87.0
1917					140.7	140.5	111.5	102.4
1918					164.1	160.2	131.1	115.6
1919					169.1	167.9	143.0	126.5
1920					190.1	186.5	171.3	145.4
1921					147.4	152.5	139.9	129.9
1922					124.6	134.1	127.9	120.4
1923					118.3	130.6	128.3	120.7
1924					122.3	131.9	125.5	118.8
1925					123.2	131.8	123.9	119.8
1926	144.4	158.5	130.2		119.9	130.6	121.1	121.8
1927	138.6	149.4	127.8		119.9	131.2	119.8	119.9
1928	136.3	134.3	138.2		118.3	129.3	118.5	120.5
1929	140.8	137.2	144.4		117.6	127.9	117.3	121.7
1930	119.5	105.8	133.3		105.6	117.0	113.7	120.8
1931	78.9	65.0	92.7		92.2	100.9	103.9	109.1
1932	65.5	60.4	70.5		89.3	93.3	97.8	99.0
1933	69.3	69.3	69.2		88.8	89.8	95.8	94.4
1934	83.5	80.5	86.5		96.8	95.5	97.9	95.6
1935	89.2	84.4	94.1	88.0	95.6	95.4	97.9	96.2
1936	97.9	102.2	93.7	96.9	98.7	98.1	98.3	98.1
1937	117.4	128.9	106.0	119.7	108.4	105.3	102.9	101.2
1938	102.9	100.9	104.8	105.0	101.2	101.7	101.9	102.2
1939	92.6	83.7	101.5	91.8	95.7	99.3	99.5	101.5
1940	96.1	85.4	106.7	96.8	101.8	106.8	108.1	105.6
1941	106.6	88.9	124.4	110.2	107.8	116.1	114.1	111.7
1942	127.1	109.7	144.6	133.1	119.2	131.6	119.0	117.0
1943	145.4	129.0	161.8	157.8	122.4	143.4	121.7	118.4
1944	155.3	144.5	166.1	172.4	126.0	148.0	122.8	118.9
1945	165.3	160.4	170.2	184.2	125.9	152.1	123.2	119.5
1946	177.0	172.9	181.2	200.8	128.0	157.0	127.1	123.6
1947	189.7	179.1	200.2	212.5	139.5	170.4	138.3	135.5
1948	229.6	195.6	263.7	252.5	173.1	196.9	162.8	155.0
1948								
June	239.1	213.3	265.1	257.4				154.3
July	240.0	209.9	270.3	259.2				156.9
Aug.	238.2	190.7	285.8	263.9	176.7	203.7	169.5	157.5
Sept.	236.2	184.6	287.9	261.5				158.9
Oct.	232.7	184.4	280.9	260.1				159.6
Nov.	232.4	186.2	278.4	257.8				159.6
Dec.	235.6	186.7	280.4	259.7				158.9
1949								
Jan.	232.2	187.7	276.7	257.5	180.3	198.3	171.8	159.6
Feb.	226.2	186.1	266.3	253.0				159.5
Mar.	224.2	183.7	264.7	251.2				159.2
April.	224.5	184.9	264.1	250.8	180.5	202.9	173.5	159.3
May	225.2	186.1	264.3	250.9				159.5
June	230.2	190.5	269.9	252.7				160.5

(a) Revised July, 1948, by The Dominion Bureau of Statistics.

(b) Canada. Dominion Bureau of Statistics, Prices Branch. *Prices and Price Indexes*. (Mimeo). Ottawa, Monthly. Wholesale prices of products of Canadian farms.

(c) Ibid (b). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid (b). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agricultural Division. *Index Numbers of Farm Prices of Agricultural Products*. (Mimeo). Ottawa, Monthly.(f) Canada. Dominion Bureau of Statistics, Prices Branch. *Price Index Numbers of Commodities and Services Used by Farmers*. (Mimeo). Ottawa, Jan., Apr., and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) *Price Index Numbers of Commodities and Services Used by Farmers*. Includes food, clothing, fuel, household equipment, health, maintenance and miscellaneous.(i) *Prices and Price Indexes*. Includes food, rent, fuel and lighting, clothing, home furnishings and services, miscellaneous and retail prices of commodities.

THE ECONOMIC SITUATION

Economic activity in Canada continues to be maintained at a high level. Canada's immediate and major problem arises out of the troubled international exchange situation—the dollar problem. Total investment expenditure, both public and private, will exceed that of 1948. Current industrial activity is being maintained at a peace-time high. Prices, on the whole, have shown some softening but nothing in the nature of a trend. As indicated in an earlier issue, disposable income in 1949 will likely equal or exceed that of 1948.

Investment.—If investment plans are realized, 1949 will be a record year of investment activity in Canada. Total private and public investment estimated earlier in the year by the Department of Trade and Commerce at \$3.3 billion is now put at \$3.4 billion, a three per cent increase. Private investment is up four per cent and public investment two per cent over the earlier estimates. The total capital expenditure program of business, institutions and governments in 1949 is likely to be, in dollar terms, 11 per cent higher than the \$3 billion actually spent in 1948. A part of this increase, perhaps some six per cent, will be due to increases of construction costs and the price of machinery and equipment, leaving about a five per cent increase in the actual volume of investment.

The total investment program of \$3.4 billion covers new investment only and does not include repair and maintenance expenditures. It is made up of construction expenditures of \$2 billion and purchases of machinery and equipment amounting to some \$1.4 billion. Compared with 1948, construction is up 14 per cent and machinery and equipment purchases are up eight per cent. Compared with the first-of-the-year appraisal, the mid-year survey shows increases for construction and for machinery and equipment of two and six per cent respectively. Better deliveries of machinery and equipment are in part responsible for the upward revision of the latter item.

The three per cent increase in capital expenditures is fairly well distributed throughout most major sections of the economy. Manufacturing, trade, finance and commercial services, housing and direct government show increases of from two to five per cent, and the primary and construction industries are

up 11 per cent. Utilities and institutions show insignificant declines.

Housing expenditures are now put at \$763 million. Allowing for the completion of close to 90,000 units in 1949, or about 10 per cent more than in the preceding year, this program tops the pre-war record by about 25,000 units and the post-war record so far achieved by about 9,000 units. The increase in capital expenditures forecast by the manufacturing industry is small in total (2.4 per cent). However, the variation between the January and June estimates for particular branches of manufacturing is particularly noteworthy. Tobacco and tobacco products are down 55 per cent, while printing and publishing increased 17 per cent, transportation equipment 21 per cent and non-ferrous metal products 50 per cent.

Investment expenditures in all regions with the exception of the Maritimes are up over the previous forecast and over 1948. The Maritime provinces show a decrease of 11 per cent from the earlier estimate, nearly all in residential construction.

Total capital, repair and maintenance expenditures are thus now placed at \$4.9 billion, three per cent more than the \$4.75 billion estimated earlier in the year. This is about \$450 million, or 10 per cent, more than the \$4.45 billion estimated to have been spent in 1948.

In the January appraisal it was stated that "on balance it seems reasonable to expect that actual investment during 1949 will achieve and may possibly exceed the \$3.3 billion level anticipated in the survey of investment intentions". The result of the mid-year survey confirms this possibility.

Most of the increase of investment anticipated in the mid-year survey appears to be owing to greater availability of materials and labour and improved deliveries of machinery and equipment.

With the most urgent post-war backlog of investment needs having been met, investment decisions, particularly of the business sector, are becoming more sensitive to current economic development and prospects. This change in attitude towards investment is reflected in the larger number of upward and downward revisions of investment intentions over the past six-months period than has occurred in previous periods.

The net effect of this is little change in aggregate, though variations of individual investment intentions were more significant.

Production.—The index of industrial production for April 1949 was 187.2 (1935-39=100), a peace-time high. The corresponding figure for March of this year was 185.5 and for April a year ago 184.1. The previous peace-time high was reached in December 1948, when the index stood at 185.8. Increased production of durable goods was primarily responsible for the rise with the subindex for transportation equipment moving from 252.5 in March to 266.7 for April while that for motor vehicles moved from 189.3 to 212.9. In both these cases new highs since 1945 were reached. In May the total index reached 187.0.

Residential building in Canada rose sharply during the first four months this year with completions and starts both showing substantial gains over the same period last year. There were 25,100 dwelling units completed in the period, an increase of 6,800 or 37 per cent over the same period of 1948, according to estimates by the Dominion Bureau of Statistics. This gain is due to the high carry-over of houses under construction at the end of 1948. Starts were also made on 16,900 dwelling units in the first four months of this year, an increase of 12.7 per cent over the same period of 1948.

Moderate increases in most fruit crops are indicated in the first estimates of production for this year released by the Dominion Bureau of Statistics. The acreage of asparagus, beans, peas and tomatoes under contract to the vegetable processors is sharply reduced this season. The corn acreage on the other hand shows an increase of 23 per cent over 1948.

Apple production is currently estimated at 16,770,000 bushels, 25 per cent above the 1948 level. The pear crop will amount to 831,000 bushels, slightly larger than the 1948 crop of 789,000 bushels. Plums and prunes are expected to increase this season and are estimated at 744,000 bushels compared with 671,000 bushels. The peach crop is at present estimated at 2,025,000 bushels, a 15 per cent increase over the last season.

Apricots will be a larger crop at 172,000 bushels. This fruit is grown commercially only in British Columbia where the 1948 crop amounted to 152,000 bushels. The production of cherries, estimated at 404,000 bushels, is expected to be only three per cent heavier than

in 1948. Loganberries, which are grown commercially in British Columbia are sharply reduced this season at 1,248,000 pounds compared with the 1948 crop of 2,261,000 pounds. The grape crop is expected to amount to 64,329,000 pounds, or 12 per cent above the 1948 level.

The acreage of vegetables under contract to vegetable processors follows, figures for 1948 in brackets: asparagus, 790 (1,210); beans, 5,020 (8,150); corn, 63,180 (51,440); peas, 33,120 (49,220); tomatoes, 38,980 (67,120).

The 1949 crop of maple products was heavier than in 1948, but still well below the average output for the 10 years, 1938-47, according to figures released by the Dominion Bureau of Statistics.

Production, expressed in terms of syrup, amounted to 2,485,000 gallons compared with 2,394,000 in the preceding year.

The sixth telegraphic report (August 9) of the Dominion Bureau of Statistics indicated that rain was needed in all provinces. Pastures have suffered from drought and coarse grain crop yields will be disappointing, but in Ontario fodder corn and special crops show good prospects. Harvesting is general in the southern parts of the Prairie Provinces. Good yields are expected in Manitoba and some parts of Saskatchewan and Alberta. Recent rains have improved crop prospects in British Columbia.

The Labour Force.—Canada's civilian labour force as of March 5, 1949, was estimated to total 4,899 thousand persons. This compares with 4,825 thousand on February 21, 1948, and 4,706 thousand on March 1, 1947. Unemployed numbered 199 thousand, seasonal influences being mainly responsible. This figure is approximately 4.1 per cent of the total labour force.

Employment in leading establishments in the eight major industrial divisions showed moderate improvement at May 1, reversing the downward movement indicated in immediately preceding months, according to preliminary figures released by the Dominion Bureau of Statistics. The rise in employment was accompanied by a slight advance in total payrolls. Per capita weekly earnings, however, were down slightly from April but above May, 1948.

The advance index number of employment, based on 1926 as 100, stood at 188.6—a new high for May 1—as compared with 187.6 at April 1, and 186.5 at May 1, 1948. Marked seasonal curtailment was noted in logging opera-

tions in the Eastern and Central provinces, but the trend in numerous other industries was favourable at the beginning of May.

External Trade.—Aggregate value of foreign trade for the first four months of this year increased to \$1,813,800,000 from \$1,707,400,000 in the same period of 1948, or by 6.2 per cent.

Both imports and domestic exports were higher in the month and four-month period. The advance in the value of imports was seven per cent in April and nearly 12 per cent in the cumulative period. The value of exports was up 12 per cent in April, and one per cent in the four months.

Canada's domestic exports in May, showing the usual seasonal trend, increased in value to \$272,900,000 from \$237,800,000 in April, but were 3.4 per cent below the value of \$282,300,000 for May 1948, according to trade returns released by the Dominion Bureau of Statistics. Aggregate value for the five months ended May was slightly above that for the corresponding period of 1948, amounting to \$1,169,600,000 as against \$1,166,600,000.

Prices.—A further decline was shown in wholesale prices in Canada in May, according to the general price index number issued by the Dominion Bureau of Statistics. The index was down 1.1 points from April, 3.2 points from the high reached in December 1948, but six points above May 1948.

The index for May 1949 (on the base 1926=100) stood at 156.4 as compared with 157.5 in April, 159.6 in December, and 150.4 in May 1948. As compared with April, there were decreases in six of the eight sub-group indexes, vegetable products and iron products being higher.

Prices of agricultural products received by farmers as reported in May were up fractionally. Compared with a year ago, higher prices for livestock, fruits, tobacco, poultry and eggs more than offset declines in the prices of coarse grains, dairy products, potatoes, vegetables and furs. Compared with the previous month, higher prices for grains and livestock offset lower prices for dairy products, potatoes and vegetables.

Prices paid by farmers showed a gain during the first quarter of the year. The Dominion composite index of commodities and services used by farmers, inclusive of living costs, rose from 187.7 for January 1949 to 191.2 for April 1949, due largely to a seasonal increase in wage

rates. This compared with 184.2 for April of last year, and is an all-time high for this series, which extends back to 1913. The Dominion composite index, exclusive of living costs, rose 4.6 points between January and April to reach 202.9, as compared to 197.8 for April 1948.

Farm wage rates increased from 352.2 to 379.6 between January and April. As a result of higher rates of pay in Western Canada the wage rate index rose slightly above the level of the preceding April.

Farm equipment and materials stood at 180.5 for April, as compared with 180.3 for January, and 172.9 for April 1948.

Cost-of-Living.—The cost-of-living index advanced from 160.5 to 162.1 between June 1 and July 2. The increase established a new peak for the index and placed it 2.5 points above the previous high of 159.6 recorded for October and November 1948, and January 1949.

The June-July advance was entirely attributable to a rise in the food index of 4.3 points to 207.2. This was accounted for by a further seasonal rise in meats combined with a number of other increases, the most important of which were potatoes, eggs and fresh vegetables.

Farm Income.—Preliminary figures, published by the Dominion Bureau of Statistics, indicate that during the first three months of 1949, farmers' receipts from the sale of farm products amounted to \$406,386,000 as compared with \$380,006,000 in 1948 and \$333,779,000 in 1947, a gain of 6.9 per cent and 21.7 per cent respectively.

Cash income from the sale of field crops at \$133,878,000 for the first quarter of 1949, was up more than 20 per cent, compared with the first quarter in 1948. This increase can be largely attributed to the increases in the marketing of the five principal grains and a higher price for wheat. Income from the sale of livestock and livestock products totalling \$264,776,000 for the January-March period of this year is relatively unchanged from that of the same period of 1948. With the exception of cattle and calves, the 1949 marketing of livestock were down this year as against last. Prices on the other hand were, without exception, higher than a year ago with the index of livestock prices indicating an overall increase of more than 20 per cent.

FARM MANAGEMENT AND LAND USE IN THE CRESTON AREA OF BRITISH COLUMBIA, 1946-47

R. C. BLAIR

Analyses of data obtained from 132 farms show the districts of Creston, Erickson and Canyon to be generally the most productive and prosperous in the Creston Valley. Although primarily an area of tree fruit production, Creston Valley agriculture is greatly diversified. Most of the types of farming carried on in the Province of British Columbia are represented in this area of only 120 square miles.

This study was undertaken during the summer of 1947 as a result of the increased demand for suitable farm land and a renewed interest in the utilization of land resources. A total of 132 farm business records was obtained for the year May 1, 1946, to April 30, 1947, by the one-call survey method. The sample was randomized along three main strata; namely, type of farming, locality and size of farms in total acres. The survey was conducted by the Economics Division, Dominion Department of Agriculture, with the co-operation of the British Columbia Department of Lands and the Department of Agricultural Economics, University of British Columbia.

The Creston Valley is located in the south-eastern portion of the Province of British Columbia at the southern end of Kootenay Lake. It is the largest agricultural area in the Purcell Trench, comprising some 75,000 acres. The area is serviced by the Trans-Canada highway and the Kettle Valley branch of the Canadian Pacific Railway. It is divided into seven districts; namely, Creston, Erickson, The "Flats", Wynndel, Camp Lister, Canyon and West Creston.

Creston and Erickson.—In these areas, 2,000 acres of land are under cultivation. The division between them appears to be largely artificial and may be due to the use of different irrigation systems. The location on the southern slopes of Goat Mountain tempers winter severity. This location and the use of irrigation lengthen the growing season. In Creston and Erickson conditions are nearly ideal for the production of Delicious, McIntosh and Wealthy apples, Bartlett pears, Bing and Lambert cherries and Italian prunes.

The "Flats".—This is an area of approximately 17,200 acres of reclaimed land at the southern end of Kootenay Lake. There are no residences and very few farm buildings. The farms are few in number and large in size. Since 1928, when reclamation began, yield and quality of the main crops, wheat, oats and barley have been very good. The district has suffered flood damage in the years 1930, 1932, 1938 and 1948.

Wynndel.—This area has an abundant supply of water, and has long been devoted to small fruit production, mainly strawberries, raspberries, and currants. Flowers and bulbs are grown also, but on a very small scale.

Canyon.—Like the Creston and Erickson districts, Canyon is devoted mainly to tree fruit production. This district however, has a growing season that is shorter and crops are more subject to winter injury. The irrigation supply is limited in capacity, only about half of the farms having this facility. Like Creston, Erickson and Wynndel, the district features a heavy clay soil with medium to heavy vegetation covering the unimproved portion.

Camp Lister.—This is mainly a mixed farming area of comparatively moderate incomes. A high grade of alfalfa is produced. The soil is a medium clay with heavy bush covering the unimproved portion. The district lacks irrigation, and an irrigation project may be justified.

West Creston.—This district is rugged, steep and heavily forested. There are a few scattered pioneer farms, but agricultural development is very slow.

Farm Types.—The records obtained were grouped according to the source of income. Of the 132 records studied, 69 were classified as tree fruit farms, 10 as small fruit farms, 21 as mixed farms, 14 as part-time farms and 18 as "others".

Table 1.—Distribution of Farms by Type and by District, Creston Valley, B.C., 1946-47

Farm Types	Districts							Total No. of Farms
	Creston	Erickson	The Flats	Wynndel	Canyon	Camp Lister	West Creston	
Tree Fruit.....	33	22	.....	1	12	1	.....	69
Small Fruit.....	.....	3	.....	6	.....	1	.....	10
Mixed.....	4	.....	1	4	2	10	.....	21
Part-time.....	5	.....	.....	1	4	4	.....	14
Others.....	3	2	2	4	2	3	2	18
All Operators.....	45	27	3	16	20	19	2	132

The majority of farms recorded in the Creston Valley were of the tree fruit type and concentrated on the elevated bench lands of Creston, Erickson and Canyon (Table I). Most of the small fruit farms recorded were in the Wynndel district which is predominantly a small fruit area. About 60 per cent of the mixed farms were in the Camp Lister district. The part-time and other farms were scattered throughout the valley. Part-time farms were not typical of any particular area. The non-farm portion of the operators' incomes was from a variety of sources not located in any particular district. Some of the "other" type farms were typical of certain districts because of the make-up of this group. It was composed of specialized types, but the number of farms in each type was much too small to merit separate analysis.

Land Utilization.—The total arable land¹ in the Creston Valley was estimated as follows:

Kootenay River Flats.....	40,000 acres
Creston, Erickson and Camp Lister.....	30,000 acres

There was an additional 1,000 acres in the vicinity of Wynndel and Alice Siding² on the slopes of Goat Mountain. This gave a total of 71,000 acres, about 30 per cent of which is now under cultivation.

Reclaimed land (mostly grain).....	17,200 acres
Mixed farming	2,500 acres
Tree fruits	1,900 acres
Small fruits	150 acres
Other	49,250 acres

Total Arable Land..... 71,000 acres

The small fruit group of farms had the highest percentage of estimated arable acreage, and the "others" group the lowest.

On the 132 farms studied, an average of 57.5 per cent of the land was improved. There was little variation in percentage of farm area improved among the five farm groups, the range being from 52.4 per cent to 63.8 per cent, a spread of 11.4 per cent.

The breakdown of the improved acreage for the five farm types in the Creston Valley is shown in Table 2. In the tree fruit group, over 80 per cent of the improved acreage was in orchards and no other crop was outstanding.

Specialization was not pronounced in the small fruit group. Over a third of the improved acreage in the small fruit group was in hay, but very little was sold.

¹ Province of British Columbia, *Annual Report of the Department of Agriculture for the Year 1945*. Victoria, B.C., The King's Printer, 1946. p. 83.

² Alice Siding is a sub-district between Creston and Wynndel. For purposes of analysis, it was considered part of the Creston district.

Table 2.—Land Utilization in the Creston Valley, Average Acreage by Farm Type, 1946-47

	Tree Fruit	Small Fruit	Mixed	Part- time	Others	All Farms
Number of farms	69	10	21	14	18	132
	—acres—					
Total acreage.....	21.2	14.8	55.0	24.0	65.4	32.4
Improved acreage.....	12.2	9.4	32.5	12.6	36.9	18.6
Unimproved acreage.....	9.0	5.4	22.5	11.4	28.5	13.8
Estimated arable acreage ^a	13.6	14.2	50.4	21.0	39.1	23.8
Orchard.....	9.9	2.7	1.8	3.3	1.6	6.2
Hay.....	1.0	3.5	12.7	6.2	7.4	4.5
Fallow and other crops.....	0.3	^b 2.1	16.6	1.0	20.1	5.8
Rotation and permanent pasture.....	0.6	0.5	0.9	1.8	7.6	1.7
Farmstead.....	0.4	0.6	0.5	0.3	0.2	0.4

(a) This includes improved acreage.

(b) This acreage is all small fruit. Other figures in this column cover a variety of crops.

A high percentage of the improved land in the mixed farm group was in fallow, hay and other crops. The figure for rotation and permanent pasture was very low because those operators in the group who required grazing area used unimproved land for the most part.

The average part-time farm had over one-third of the improved acreage in orchard and over one-half in hay. Most of the hay produced was used on the farm, and the bulk of the farm income was derived from tree fruit.

Considering all the farms recorded in the Creston Valley, the largest proportion of the improved land in any one type, about one-third, was in orchard.

Table 3.—Average Distribution of Capital Investment, Per Farm by Farm Type, Creston Valley, B.C., 1946-47

	Tree Fruit	Small Fruit	Mixed	Part- time	Others	All Farms
	—dollars—					
Land.....	8,663	6,082	6,234	4,321	6,542	7,331
Buildings.....	3,245	2,053	2,246	1,576	1,636	2,600
Special equipment.....	1,296	544	884	610	692	1,018
General equipment.....	544	388	516	628	433	521
Livestock.....	145	211	803	374	428	318
Feed and supplies.....	80	9	10	7	35	51
Seed and trees.....	33	473	197	63	177	115
Total investment.....	14,006	9,760	10,890	7,579	9,943	11,954

Capital Investment.—About 83 per cent of capital on the farms recorded was invested in real estate, and 26 per cent of this was in buildings. Tree fruit farms had the largest proportion (85 per cent) of capital invested in real estate. It is the general practice to include the trees in the land value. Generally speaking, these farms were closest to Creston, this higher location being most favourable for tree fruit production. In the case of mixed and part-time farms, the proportion of capital invested in real estate was the lowest, approximately 78 per cent.

Livestock represented an investment of about three per cent of the average capital on all farms. Tree fruit farms had only about one per cent of the total capital invested in livestock because a large proportion of the acreage was in orchards and poisonous sprays were used extensively. Small fruit farms had about two per cent of the total capital invested in livestock, mostly chickens. Mixed farms had the largest investment in livestock.

Investment in seed was small—less than one per cent of the total investment in each group.

Feed and supplies also represented a very small part of the investment for all farm groups. Practically the only feed stored was hay, and, as livestock was of minor importance in the Creston Valley, little of this was carried over. In most cases, mashes and grain were purchased at least twice a month, and therefore no large quantity was on hand at any time. The inventory on these farms was opened and closed in May, a month when supplies are generally low.

The farm machinery and equipment were considered as two types, special and general. Special equipment included trucks, automobiles, threshers, tractors and combines. General included all other types of farm machinery and equipment. The proportion of capital invested in machinery and equipment ranged from 10 per cent for the small fruit group to 16 per cent for the part-time group, with an average of 13 per cent for the 132 farms recorded. Most of the work on the small fruit farms was manual. Tractors were not used on many of the small fruit farms. Horses were found to be more useful and supplied valuable manure. Of the total investment in machinery and equipment, approximately two-thirds was in special types.

Table 4.—Business Summary By Farm Type, Creston Valley, B.C., 1946-47

	Tree Fruit	Small Fruit	Mixed	Part- time	Others	All Farms
Number of Farms	69	10	21	14	18	132
—dollars—						
INCOME—						
Farm Cash Receipts.....	4,780	3,521	2,587	498	1,996	3,502
Capital Receipts.....	289	.....	94	37	2	170
Outside Wages ^a	79	30	45	948	134	170
Inventory Increase.....	236	87	967	314	122	333
Total.....	5,384	3,638	3,693	1,797	2,254	4,175
CURRENT EXPENSES—						
Taxes.....	70	37	57	43	60	61
Water.....	44	80	37	28	61	48
Special Equipment.....	206	129	217	94	164	184
General Equipment.....	3	7	13	3	7	5
Buildings, Fences, Wells.....	40	38	62	60	47	46
Feed and Seed.....	104	245	398	166	248	188
Fertilizer and Spray.....	158	62	53	38	33	104
Boxes and Crates.....	782	326	65	43	90	461
Custom Work.....	181	73	56	20	68	120
Labour.....	652	976	184	128	114	473
Co-op Charges.....	42	185	4	.....	2	37
Miscellaneous.....	171	133	143	66	81	140
Total.....	2,453	2,291	1,289	689	975	1,867
CAPITAL EXPENSE.....	900	307	1,376	553	323	815
TOTAL CASH OUTLAY.....	3,353	2,598	2,665	1,242	1,298	2,682
UNPAID LABOUR.....	782	624	613	914	494	718
TOTAL EXPENSE.....	4,135	3,222	3,278	2,156	1,792	3,400
Interest on Investment.....	700	488	544	379	497	597
Operator's Labour Income.....	549	-72	-129	-738	-35	178
Perquisites.....	458	372	559	433	490	469
Labour Earnings.....	1,007	300	430	-305	455	647
Unearned Income ^b	411	130	400	785	417	428
Operator's Net Income ^c	1,418	430	830	480	872	1,075

(a) Income received by the operator for his labour off the farm.

(b) Income from investments, gifts, war gratuities, etc.

(c) Net income received by the operator regardless of source.

Business Summary.—For the year under review, orchardists had the highest gross farm income and part-time operators averaged lowest.

For all farms recorded, the three largest items of expense were labour, crates and boxes, and feed and seed. In the part-time group, total expenses

exceeded the receipts. Labour income was highest for the orchard operators (\$549) and lowest for the part-time group (\$-738). The labour earnings ranged from \$1,007 for the tree fruit group to \$-305 for the part-time group with an overall average of \$626. Unearned income was kept separate from the farm income because it was not income for the operator's labour, nor did it have anything to do with the actual farm business. Unearned income came from a wide variety of sources and was a significant item in all farm groups with an average of \$785. Operators' net income was positive for all groups, varying from \$430 for the small fruit group to \$1,418 for the tree fruit group. The average operator's net income for all farms was \$1,036.

Summary.—The Creston Valley is an area of great diversification. It is divided into seven districts; namely, Creston, Erickson, The "Flats", Wynndel, Camp Lister, Canyon and West Creston.

In the Creston, Erickson and Canyon districts, over 70 per cent of the farms recorded were specialized tree fruit farms. The "Flats" is a grain growing area; Wynndel, small fruit; Camp Lister, hay and mixed farming; and West Creston, marginal mixed farming.

Considerable unimproved acreage was available in the Camp Lister area and was being cleared by Provincial land clearing units. More extensive agricultural development seems unlikely unless the proposal to reclaim Duck Lake is adopted. This would bring approximately 22,000 acres of land under cultivation.

On all farms studied, an average of 57.5 per cent of the land was improved. The tree fruit farms were highly specialized with over 80 per cent of the improved land in orchards. Specialization was not pronounced in the other farm groups.

Capital investment was largest on the tree fruit farms and lowest on the part-time farms. About 83 per cent of the capital on all farms was invested in real estate and 26 per cent of this was in buildings.

The average operator's labour income for all farms recorded was \$178. The tree fruit group afforded the highest labour income and the part-time the lowest.

Immigrants to Canada during the fiscal year ended March 31, 1949, numbered 125,603, it was announced on May 3 by the Minister of Mines and Resources. This total exceeded the 79,194 recorded for the fiscal year 1947-48 by 58.6 per cent.

The 125,603 immigrants included 40,015 from the British Isles, 7,306 from the United States, and 18,450 from northern European races. The latter included 9,866 Dutch, most of whom came to this country under the joint Netherlands-Canada farm settlement plan. Under this program, arranged through the co-operation of the Canadian and Netherlands Governments, more than 7,000 members of the Dutch farm families entered Canada in 1948. Skilled agriculturists, the Netherlands work for Canadian farmers until sufficiently well established to purchase their own farms.

There were also 59,832 immigrants from other races, leading groups including 15,420 Poles and 10,498 Ukrainians.

Included in the immigrants were 50,610 Displaced Persons, of whom 27,894 joined close relatives already living in Canada.

In all, 64,860 Displaced Persons have been admitted to Canada since the first arrivals in April, 1947. Highest numbers of Displaced Persons have been absorbed by agricultural, mining, water power, forest and clothing industries. Some 8,000 girls came to Canada to work in hospitals and private homes.

POST-WAR TRENDS IN SPECIALTY CROPS FOR THE IRRIGATED AREAS OF ALBERTA¹

A. J. PYRCH

Acreages in Specialty Crops.—The number of acres in specialty crops has changed little since 1945. The total acreage in such crops in 1947 amounted to 67,015, as compared with 66,699 in 1945. Noticeable changes occurred in the acreages planted to different crops. In 1945, canning crops constituted nine per cent of the total specialty crop acreage, whereas in 1947 this figure increased to 13 per cent, with the greatest part of the increase attributable to the expansion in corn acreage. Another evident change occurred within the specialty seed acreage. Legume seeds were reduced by 3,200 acres since 1945. A portion of this reduction was supplanted by an increase in the acreage placed to dried peas. Specialty seeds, however, comprised only 34 per cent of the total specialty crop acreage in 1947, as compared to 36 per cent in 1945.

There were no significant changes in the fresh vegetable and sugar beet acreages in this period, with the acreage in each remaining at approximately 6,500 and 29,000 respectively.

Markets for Specialty Crops

Canning Crops.—The volume of canned vegetable produce moving out of the irrigated area in 1947 was 26,694,165 pounds, 20 per cent greater than the 22,230,567 pounds in 1945. Corn, peas and other² vegetables accounted for this increase in that order respectively. Shipments of beans were down 13 per cent, and pumpkin 50 per cent from 1945, due primarily to a large carryover of stock from the previous year.

Markets for canned vegetable produce were confined to the Prairie Provinces to the extent of 82 per cent in 1947, compared with 73 per cent in 1945. Movements to more distant markets such as the west coast, the United States, and Eastern Canada were smaller in relation to the volume moved, and accounted for only 18 per cent of the total shipments in 1947. A major part of this reduction was due to the loss of the U.S.A. market for pumpkin. This market in 1945 took 75 per cent of the total shipments of pumpkin, a total of 1,352,685 pounds.

Fresh Vegetables.—Since 1945 total shipments of fresh vegetable produce from the irrigated areas increased by 54 per cent, from 15,210,291 pounds, to 23,396,885 pounds in 1947. This increase in shipments was largely due to a more active marketing program and the establishment of greater and more efficient marketing facilities. Root cellars have been built to provide centralized storage and segregation of produce by grades. With these facilities produce may readily be inspected, and purchased in bulk. This attracted distant buyers, who, before establishment of such facilities, had to locate and contact individual farmers, who had only ungraded supplies to offer.

Potatoes comprised sixty-five per cent of the total vegetable movement and cucumbers, which were shipped to Winnipeg for pickling, made up two-thirds of the remaining 35 per cent.

Except for increased shipments of cucumbers to Manitoba, markets for fresh vegetable produce in 1947 were much the same as in 1945, with the greater part of the market being confined to Alberta and the adjoining provinces. Shipments beyond these boundaries are, however, becoming somewhat more evident, and this trend is expected to continue with further improvement in handling facilities.

¹ See "Specialty Crops in the Irrigated Areas of Alberta" in *The Economic Annalist*. Aug. 1948. p. 65.

² "Other" includes carrots, beets, and macedoine.

Specialty Seeds.—There was a decrease in alfalfa, clover and garden seed shipments in 1947 as compared with 1945, but this was more than off-set by an increase in seed peas, for an overall increase of 22 per cent in the total volume of specialty seeds marketed. Of the 10,288,137 pounds in 1945, 8,383,611 pounds of specialty seed shipped from the area in 1947, peas comprised 88 per cent of shipments, alfalfa and clover 11·8 per cent and garden seeds the remaining 0·2 per cent. There was a general contraction in alfalfa and clover seed production because farmers had switched from legume seed productions to hay. Uncertainty in legume seed setting made seed production too risky for irrigation farms.

Garden seed production, on the other hand, was reduced because of the decline in the demand for this kind of seed. Europe, which during the war had to rely on imports from Canada, is now not only producing adequately for domestic supply, but is once again approaching her pre-war exporting status. Thus, Canadian seed producers no longer have that export market and are faced with the possibility of competition on their own domestic market. As a result, acreages were reduced to one-half the pre-war level and the volume of seed moving out in 1947 totalled only 33,069 pounds, the bulk of which was radish.

Of the 10,288,137 pounds of specialty seeds shipped from the area, Ontario and Quebec took 30 and 26 per cent respectively in pea and garden seed, while Alberta and Manitoba accounted for 14 per cent and 10 per cent of shipments, which included all of the alfalfa and clover seed. The remainder of shipments was made to other provinces and Europe.

Sugar Beets.—Beet sugar shipments out of the area totalled 127,798,365 pounds in 1947, an increase of 26 per cent over 1945 (101,374,625 pounds). Markets for beet sugar in both years were confined largely to the three Prairie Provinces. Alberta, Saskatchewan, and Manitoba took 36, 35, and 26 per cent of total shipments respectively for a total of 97 per cent of all sugar marketed. The Ontario market accounted for the remaining three per cent.

Some sugar was marketed in British Columbia in 1945, but none in 1947. Evidently the British Columbia market was supplied by cane sugar from the coastal refineries.

Indications are that in the future markets for Alberta beet sugar will be confined to the three Prairie Provinces.

Summary

Since 1945 acreages in specialty crops have been maintained or increased, except for alfalfa, clover and garden seed. Expansion was greatest in canning corn and dried pea acreages.

Despite the fact that the volume of shipments was greater in 1947 for most products, market destinations were much the same as in 1945. Where demands were weaker, there was some indication of confinement of markets to those areas adjacent to the area of production.

Production of cement in Canada during 1948 exceeded all previous records both in quantity and total value of products, according to the annual report released by the Dominion Bureau of Statistics. During the year, 14,127,123 barrels valued at \$28,264,987 were sold or used by the producers as compared with 11,939,245 barrels worth \$21,968,909 in 1947, an increase of 18 per cent in quantity and 32 per cent in value.

Eight plants were in operation in 1948, unchanged from the preceding year. The industry employed an average of 1,723 persons who received \$4,356,086 in wages and salaries compared with 1,650 employees whose earnings aggregated \$3,679,446 in 1947.

PRODUCTION AND MARKETING OF POTATOES FROM THE IRRIGATED AREAS OF ALBERTA

C. M. KLINE

Potatoes are one of the crops which can be produced successfully on irrigated land and disposed of satisfactorily. The purpose of this article is to record the trends in production and marketing and make some observations as to future expansion of potato production under irrigation.

Potato Production and Acreage in the Four Western Provinces.—During the ten years, 1938-48, Alberta ranked third as a potato producer among the four western provinces (Table 1). Saskatchewan had the highest average production and acreage, followed by Manitoba. British Columbia had the lowest average of the four western provinces.

There has been a noticeable reduction in total acreage from a high in 1938 of 129,400 acres to the 1948 low of 100,800 acres. The reduction in acreage is most apparent in Saskatchewan, but both Manitoba and Alberta showed substantial reductions since 1938. In British Columbia there is no definite trend, only a variation between high and low acreages.

The production figures, while subject to considerable variation from year to year, do not show any definite change over the past 11 years. Production in the latter half of the period studied is slightly smaller than for the first half, but the decrease is less than might be expected with reduced acreage. Superior

Table 1.—Production and Acreage of Potatoes in Alberta and the Four Western Provinces, 1938-48

Year	Alberta		Four Western Provinces	
	Production	Acreage	Total Production	Total Acreage
	cwt.	ac.	cwt.	ac.
1938.....	2,087,000	28,200	9,085,000	129,400
1939.....	1,219,000	25,400	6,894,000	128,200
1940.....	1,862,000	25,500	8,671,000	128,800
1941.....	1,950,000	30,000	9,183,000	127,600
1942.....	2,708,000	28,500	10,690,000	118,600
1943.....	2,153,000	31,200	9,612,000	124,900
1944.....	2,153,000	28,700	7,693,000	115,100
1945.....	1,554,000	25,900	6,042,000	104,000
1946.....	2,051,000	26,300	7,590,000	107,300
1947.....	1,960,000	24,500	8,298,000	103,400
1948*.....	2,029,000	22,800	8,574,000	100,800
1938-48 Average.....	1,975,090	27,000	8,393,800	117,100

(a) Estimated for 1948.

Source: Canada, Dept. of Trade and Commerce, Dominion Bureau of Statistics. *Quarterly Bulletin of Agricultural Statistics*. Ottawa, The King's Printer. January-March issues in 1948, 1945, 1942.

farming practices, better seed and a shift of acreage into the irrigation districts have led to higher potato yields. Production in 1948 was nearly as great as that of 1940, when there were 28,000 more acres planted to potatoes.

Potato Production on Irrigated and Non-Irrigated Land in Alberta.—Adequate information on potato production on irrigated land was not available prior to 1944. A comparison between irrigated and non-irrigated potato production is made for the years 1944 to 1947 in Table 2.

While the non-irrigated acreage has slowly declined since 1944, the acreage irrigated steadily increased to a peak in 1946. In 1947 there was a slight decline in irrigated acreage; however, preliminary estimates for 1948 show that an increase even greater than that for 1946 may be expected.

Even under irrigation, production of potatoes must depend on the vagaries of the weather to some extent, as well as the acreage planted. This may be

Table 2.—Comparison of Acreage, Production and Yield of Potatoes on Irrigated and Non-Irrigated Land in Alberta, 1944-47

Year	Acreage			Production		Yield per Acre	
	Non-Irrigated	Irrigated	Per Cent Irrigated of Total	Non-Irrigated	Irrigated	Non-Irrigated	Irrigated
	—acres—		per cent	—hundredweight—			
1944.....	24,450	4,250	14.8	1,750,200	402,800	75.0	94.8
1945.....	20,959	4,941	19.1	1,209,800	344,200	60.0	69.7
1946.....	20,536	5,764	22.3	1,509,182	541,818	78.0	94.0
1947.....	19,657	4,843	19.8	1,446,642	513,358	80.0	106.0
Average.....	21,400	4,950	18.9	1,478,956	450,544	73.2	91.1

Source: Non-irrigated land data—*Quarterly Bulletin of Agricultural Statistics*, Jan.-March 1947.

Irrigated land data—Pyrch, A. J. *Specialty Crops in the Irrigated Areas of Alberta*. 1949. (Unpublished) Canada, Dept of Agriculture, Economics Division, Ottawa.

noted by the decreased production in irrigated areas in 1945 and 1947 from years preceding. In 1945 the decrease in irrigated areas was due to very unfavourable weather conditions; in 1947 to a reduction in acreage. In non-irrigated areas the reduction was more marked.

The yield of potatoes grown on irrigated land in all four years was higher than the yield of potatoes in non-irrigated areas. In 1945, the lowest yield for potatoes on irrigated land was 69.7 hundredweight per acre, still 16 per cent higher than for yields on non-irrigated lands. In 1947, the year of the highest yield at 106 hundredweight per acre, potatoes on irrigated land yielded 32 per cent more than the potatoes on non-irrigated land.

Larger Acreage Possible.—In the western provinces the potato acreage over the past eleven years has decreased by more than one-fifth. However, production has not declined as rapidly as the acreage. In Alberta the overall acreage reduction has been accompanied by an increased acreage in the irrigation districts because irrigation tends to provide a more regular supply of high quality potatoes. This assures the buyer a fairly steady annual supply of quality potatoes. Thus both the producer and the buyer have the opportunity to develop and retain their markets.

Population Increase.—Population in Western Canada continues to increase. During the period 1936-47 it increased about 13 per cent, which, while not spectacular, represents a steady growth. With a larger number of people coming from Europe to settle in Canada, and new industries being established in the West, the result may be an even more rapid population increase than in the past.

Consumption Increase.—The trend in potato consumption per capita has been generally upward. Today it is the highest on record.

Table 3.—Amounts and Destinations of Rail Shipments of Potatoes from the Irrigated Areas 1944-47

Year	Total Potatoes Marketed by Rail	Proportion and Destination of Rail Shipments					
		British Columbia	Alberta	Saskatchewan	Manitoba	Ontario	United States
	cwt	—per cent—					
1944.....	64,745	2.3	56.3	22.2	17.1	2.1	.....
1945.....	117,882	7.3	44.0	43.2	4.7	0.8	.....
1946.....	239,026	2.4	23.0	59.1	13.6	1.9	.....
1947.....	150,757	26.6	23.2	24.8	14.5	9.7	1.2
Average.....		9.7	36.6	37.3	12.2	3.6	0.3

Source: *Specialty Crops in the Irrigated Areas of Alberta*.

Consumption increased from the 1935-39 average of 192 pounds to 217 pounds per person per year in 1947. The increase has been steady except for the years 1945 and 1946.

Marketing Potatoes from Irrigated Areas.—Alberta potatoes are being shipped to markets in areas from Ontario to western British Columbia. By assuring regularity of supply it is possible that these markets may be expanded. The total amount shipped out by rail for 1944-47 from the irrigated areas is shown in Table 3.

Potato marketings by rail from the irrigated areas show a variation of from 16 per cent of total production in 1944 to 44 per cent in the peak year 1946. This irregularity was caused by fluctuations in production in the provinces referred to, especially in 1945 and 1946. Until 1947, no well-organized system existed for marketing potatoes from the irrigated areas, and each farmer has had to act independently in the disposition of his crop. Recently, central grading, storage and shipping facilities have been provided in the irrigation areas to market the potatoes.

It would appear that in the future, markets could be made to absorb more potatoes from the irrigated districts if, (1) quality is kept high, and (2) the selling price is kept in line with prices in other areas of potato production.

Factors Limiting Increased Potato Production.—There are a number of conditions which may operate to restrict potato production in Alberta. Some of these are within the control of the farmer, others are not. There is the possibility of increased production taking place in any one or all of the other three western provinces, and any marked increase may lessen the demand for Alberta potatoes in other provinces. At present, however, the trend in potato acreage is downward in all the western provinces and for the next few years competition from the other provinces should not be a serious threat to the Alberta potato producer. In Eastern Canada this year, on account of a larger crop than usual, there is a surplus above what the markets will take. The Agricultural Prices Support Board is supporting prices.

Another condition which might restrict potato production in Alberta is the distance to markets outside Alberta, such as the West Coast, Manitoba and Ontario, which result in a high cost of moving potatoes to those points. During the war years and immediately afterwards, when there were shortages of potatoes in these provinces, distance was a less important factor than now. At present, Alberta potatoes must compete with potatoes from sources closer to the different markets, such as the interior British Columbia potato producers for the Coast market, and Saskatchewan producers for the Manitoba and Ontario markets. However, grading into a uniform high quality potato at the shipping point will do much to help the potato grower to compete with those from other sections closer to the consuming market.

Another factor conditioning production is the price from year to year. Potato prices have been subject to wide fluctuations, which have been due in the main to big variations in supply or yield. Irrigation will help to bring about more stability in potato production.

The Council of Economic Advisers in their report to the President of the United States on The Economic Situation at Midyear 1949 had this to say:

For the first time since the immediate postwar readjustment period, the Nation's Economic Budget reflects a decline in business activity extending over 6 months or more... Gross national product declined about 9 billion dollars (seasonally adjusted annual rate) from the second half of 1948 to the first half of 1949. This is a decline of about $3\frac{1}{2}$ per cent in current dollars, or about $1\frac{1}{2}$ per cent after allowing for declining prices...

FARM ORGANIZATION STUDY—ANNAPOLIS VALLEY, NOVA SCOTIA, 1948

J. M. GRAY AND A. GOSSELIN

Orchards in the Annapolis Valley in 1948 were smaller than in earlier years. The Economics Division has conducted three surveys in this area. The first was done during the years 1929 to 1932¹, the second in 1940 and the third in 1948. The purpose in 1948 was to study the changes that occurred in the organization of fruit farms in this area since 1941. During the intervening years, the volume moving to the United Kingdom, the principal market for Nova Scotia apples, had first been greatly reduced due to the war, and then completely eliminated, at least for the time being, due to the dollar shortage overseas. In this way, the Nova Scotia apple industry became a "war casualty" and received financial aid from the Dominion Government. After the war, prices of Annapolis Valley apples have been supported by the Federal Government. In addition there has been a joint Dominion-Provincial plan of financial aid to growers to assist them to remove old undesirable varieties.

The need for a program to change the varieties grown in the Annapolis Valley was indicated by the results of a census of apple orchards conducted by the Nova Scotia Department of Agriculture in 1939 and 1940. This census reported that less than one-fifth of the trees were of varieties generally acceptable on the North American markets and that 65·6 per cent of all the apple trees were over 20 years old, and 24·3 per cent over 40 years of age. With the marked reduction in export outlets and the increased dependence of the Nova Scotia apple growers on the Canadian market, the need for a change in the varieties of apples grown received more emphasis.

Against this background, the questions in 1948 were: What changes have occurred in farm organization in the Annapolis Valley since the last survey was conducted? What progress has been made in tree removal and orchard rehabilitation? Has there been a trend towards more diversified farming during the years of government assistance?

The method of selecting individual farmers for interviews in 1948 was to call on those who had co-operated during the 1940 study (most of whom had also co-operated in 1930). The data obtained deal with the overall farm business including the cropping program and livestock numbers; expenditure on labour, fertilizer and spray material for the apple orchard; the debt position of the farm; and an enumeration of the trees in the apple orchard by age groups and varieties.

A complete farm management record had been secured on each of these farms in 1941 and on 59 of them in 1930. Since 1940, sixteen of the farms had changed hands. In most cases this change in ownership had taken place because the original farm operator had retired or died. Generally, the farm was taken over, intact. Some cases were encountered, however, in which the farms had been broken up in such a way that no comparison with the 1941 record would have been possible. Details of such businesses were not recorded.

Changes in Farm Organization 1940 to 1948.—Changes in overall farm organization can be illustrated most effectively on the basis of labour input or the amount of productive work performed on the farms studied. These data were not calculated for the 1930 study. The total number of productive man-work units² per farm was 602·8 in 1940 and 491·0 in 1948. This would indicate that the size of the farm business decreased by 16 per cent between 1940 and 1948.

¹ Records for three years were obtained during the first study. The comparisons with later years have been confined to the 1930 figures.

² The unit of labour input is the productive man-work unit which may be defined as the amount of productive work accomplished by an average man in a ten-hour day.

Table 1.—Relative Importance of Various Farm Enterprises on 67 Annapolis Valley Apple Farms 1940 and 1948 as measured by Productive Man-Work Units per Farm

Enterprise	1940		1948	
	Productive Man-Work Units per Farm	Per Cent of Total Productive Man-Work Units	Productive Man-Work Units per Farm	Per Cent of Total Productive Man-Work Units
Apples.....	291.1	48	238.9	49
Other crops.....	90.4	15	99.2	20
Livestock.....	161.7	27	150.4	30
Other enterprises.....	59.6	10	2.5	1
Total.....	602.8	100	491.0	100

The average number of productive man-work units per farm devoted to the apple enterprise was 279.9 in 1930. By 1940 this figure increased by almost four per cent, but in 1948 it was down again by about 22 per cent. The labour input on crops other than apples increased by almost 10 per cent between 1940 and 1948.

This was probably the result of a shift into commercial vegetable and potato production in the Annapolis Valley. It seems likely that the introduction of more vegetable and potato plantings would fit in rather well with the reduction of apple orchard acreages. An acre of vegetables absorbs about as much labour as an acre of apple orchard.

As vegetables are generally annuals, financial returns may be realized during the same year that the crop is planted. As the returns from apple orchards may be low during the next few years, while the new varieties come into bearing, the ability of vegetable crops to produce a quick return would seem to be an important factor.

The labour requirements of the average livestock enterprise on the farms studied were down in 1948 by 7.5 per cent from the 1940 levels. Measured on a man-work unit basis, activity in lumbering and other non-farm work had almost disappeared in 1948. In 1940, the labour requirements per farm for these enterprises made up 10 per cent of the total productive man-work units employed on the farms, while in 1948, only 1 per cent of the total was applied to these activities.

In 1948 as in 1940, almost half of the total productive man-work units per farm were devoted to the apple orchards, bearing and non-bearing.

Table 2.—Land Use and Crop Distribution on 67 Annapolis Valley Farms, 1930, 1940 and 1948

—	1930		1940		1948	
	Acres per Farm	Per Cent of Crop Acreage	Acres per Farm	Per Cent of Crop Acreage	Acres per Farm	Per Cent of Crop Acreage
Apples bearing.....	21.6	33.5	23.1	33.6	19.5	30.8
Apples non-bearing ^a	5.3	8.2	4.9	7.1	2.8	4.4
Other crops.....	37.5	58.3	40.8	59.3	40.9	64.8
All crops.....	64.4	100.0	68.8	100.0	63.2	100.0
Total land in farms.....	162.7	.....	156.4	.....	149.8	.....

(a) The term non-bearing orchard is used to indicate an orchard less than 11 years old.

Land Use and Crop Distribution.—As shown in Table 2, the average total acreage of these farms decreased by 6.3 acres from 1930 to 1940 and by 6.6 acres from 1940 to 1948. The proportion of total land in all crops was

39.6 per cent in 1930, 43.9 per cent in 1940 and 42.2 per cent in 1948. Over this period there was a decline in the acreage per farm of both bearing and non-bearing orchard. The per cent of the total cropped land devoted to crops other than apples was about the same in 1940 as in 1930, but increased in 1948. The major changes in the crop production program on these farms occurred between 1940 and 1948. In addition, the percentage of these farms reporting non-bearing orchards was 68 in 1930, 79 in 1940 and 47 in 1948.

Between 1930 and 1940 the average acreage in bearing orchard increased by 1.5 acres per farm. Due to the loss of markets and the tree removal bonus between 1940 and 1948, bearing orchard decreased by 3.6 acres per farm. The continued decrease in new plantings is indicated by a decrease in acreage of non-bearing orchard per farm during the two periods. Sixty-eight per cent of the farms reported non-bearing orchard in 1930, 79 per cent in 1940 and 57 per cent in 1948. In 1930, for each acre of non-bearing orchard there were 4.1 acres of bearing orchard; in 1940 the proportions were 1.0 to 4.7 and in 1948, 1.0 to 7.0.

Table 3.—Average Acreage of Principal Crops on 67 Annapolis Valley Farms, 1940 and 1948

	1940		1948	
	Number of Farms Reporting	Average Acreage per Farm Reporting	Number of Farms Reporting	Average Acreage per Farm Reporting
	no.	ac.	no.	ac.
Apples bearing.....	67	23.1	66	19.5
Apples non-bearing.....	53	7.1	38	2.8
Oats.....	55	7.0	44	7.7
Other grains.....	31	4.4	15	5.0
Hay.....	67	29.2	63	29.6
Other tree fruits.....	26	1.2	18	1.8
Small fruits.....	5	0.8	3	0.7
Vegetables.....	55	0.6	47	1.5
Potatoes.....	55	1.7	51	2.8
Roots.....	40	1.1	34	1.0
Other crops.....	28	2.0	25	2.5

Table 3 indicates the average acreage of each crop for those farms on which that particular crop was reported. Without exception, each crop reported was being produced on fewer farms in 1948 than in 1940. On the other hand, increases in acreage per farm reporting were recorded for all crops with the exception of apples, roots and small fruits. This would seem to infer that the Annapolis Valley fruit farms are becoming more specialized with respect to their secondary crop programs.

Table 4.—Recommended Varieties of Apples as Percentage of Total Trees in Various Age Groups on 67 Annapolis Valley Farms 1940 and 1948

Age of Trees	Recommended Varieties as Percentage of Total Trees	
	1940	1948
	—per cent—	
Years		
1-5.....	4.8	8.0
6-10.....	2.9	8.4
11-20.....	5.8	5.5
21-40.....	4.3	9.3
41-50.....	2.0	3.2
51 and over.....	1.6	2.1
Total.....	21.4	36.5

Age and Varieties of Apple Trees.—There are six recommended varieties for the Annapolis Valley: Delicious, McIntosh, Crimson Gravenstein, Cortland, Red Rome Beauty and Red Spy. For the purpose of analyzing the figures, two other varieties were added to this list, namely: Gravenstein and Northern Spy, making a total of eight desirable varieties. It was found that in 1940 only 21.4 per cent of all the trees on the 67 farms studied were of one or the other of these varieties. By 1948 this percentage had increased to 36.5 per cent showing that definite progress had been made in changing over Annapolis Valley orchards to preferred varieties.

Table 5.—Number and Percentage of Apple Trees According to Age Groups, 67 Annapolis Valley Farms, 1940 and 1948

	1940		1948	
	Number of Trees	Per Cent of Total	Number of Trees	Per Cent of Total
1-5.....	8,325	10.0	6,865	9.7
6-10.....	6,640	8.0	8,928	12.6
11-20.....	16,327	19.8	11,090	15.8
21-40.....	31,187	37.8	23,509	33.3
41-50.....	12,595	15.3	12,738	18.0
51 and over.....	7,512	9.1	7,511	10.6
Total.....	82,586	100.0	70,641	100.0

Livestock.—The number of animal units¹ per farm increased very slightly; it was 13.7 in 1940 and 14.3 in 1948. The pattern of relatively small livestock enterprises reported on the 1940 study has not fundamentally changed. There was a decline in the number of farms with horses. This, however, can be expected between 1940 and 1948 as greater use of power machinery was made during that period.

The principal change in the production of livestock over the eight-year period from 1940 to 1948 was the increase in the size of the poultry enterprise. There were 128 hens per farm in 1948 compared with 58 hens in 1940. Eight farms reported over 200 hens in 1948 while only 5 farms had over 200 hens in 1940². This may well mean that the apple specialists regard a poultry enterprise as the most suitable livestock sideline. Poultry production is probably the easiest livestock enterprise to enter.

Since 1940, there has been an increase in the number of heifers per farm and a decrease in the number of calves. In percentage terms, these changes are substantial, but in absolute terms, both the increase in the number of heifers and the decrease in the number of calves are small.

The number of hogs and pigs per farm has almost doubled since 1940, although sow numbers are less. However, pork production appears to have remained a small scale enterprise on the majority of the farms studied.

In general it would seem that livestock production has not increased substantially on Annapolis Valley fruit farms between the years 1940 and 1948.

Labour, Fertilizer and Spray Material Expenditures.—These three items account for the largest share of expenditure on the orchard enterprise. In 1940 labour, fertilizer and spray material accounted for 73.7 per cent of the cash costs and 65.5 per cent of both cash and non-cash costs of apple production on these 67 Annapolis Valley farms.

¹ An animal unit represents an average mature horse, cow or the equivalent in other livestock, based on feed consumption and manure production.

² For more details on poultry production in Nova Scotia see: "Poultry Production in Nova Scotia" and "Relationship of the Poultry Flock to Other Farm Enterprises on Nova Scotia Farms" by G. C. Retson. *The Economic Annalist*, Vol. XVIII, No. 3:52 and No. 4:80. 1948.

Table 6.—Comparison of Principal Items of Expense on Bearing Orchard, 67 Annapolis Valley Farms, 1930, 1940 and 1948

	1930	1940	1948
	—dollars per acre—		
Labour—hired plus family (excluding value of the operator's labour)	45.28	32.06	56.48
Spray material.....	11.54	8.92	23.04
Fertilizer.....	10.53	5.20	13.28
Total.....	67.35	46.18	92.80

Expenditures for labour, spray materials and fertilizers were substantially lower in 1940 than in 1930. The explanation may be that in 1940 the outbreak of war had greatly reduced the overseas market and this caused the growers to minimize outlays on apple production. By 1948, the value of spray materials and fertilizers applied per acre of orchard was greater than in 1930. If the value of fertilizer applied per acre is adjusted by the index of fertilizer prices for Eastern Canada, the figures become: \$9.23 per acre in 1930, \$4.90 per acre in 1940 and \$9.97 per acre in 1948. Growers seem to be prepared to spend at least as much money per acre as they were in 1930, on fertilizer and sprays. Adequate applications of these chemicals is necessary to produce a high quality crop and without a proper spray and fertilizer program, the benefit from changing the apple trees over to more acceptable varieties would be lost.

When the index of farm wage rates for Eastern Canada is applied to the value of labour per acre of orchard, the figures became: \$33.10 per acre in 1930, \$23.45 in 1940 and \$15.23 in 1948. The value of labour applied per acre, although it followed the trend of the spray and fertilizer applications from 1930 to 1940, did not increase as greatly as the value of the other two factors after the war.

Man-Equivalent per Farm.¹—The average man-equivalent per farm was 2.54 in 1930, 2.43 in 1940 and 2.24 in 1948. The number of productive man-work units per man-equivalent was 248 in 1940 and 219 in 1948. This reduction in man-equivalent per farm and in the number of productive man-work units per man-equivalent may be partly explained by the decrease in the size of orchards.

Measured on a basis of amount of time worked, 48.2 per cent of the labour was hired in 1940 and 56.8 per cent in 1948. The relatively smaller proportion of hired labour during the war years can probably be explained by the man-power shortage at that time.

Farm Indebtedness.—The long-term indebtedness of these 67 farmers was about the same in both years. In 1940 the average long-term debt reported by 37 farms averaged \$4,406 while in 1948 the average for 35 farms reporting was \$4,580. With regard to short-term loans, there was a material change in both the number of farmers who secured loans and the average loan per farm. In 1940 only 24 farms out of 67 had to borrow money for financing their farm operations while in 1948 there were 40. The average amount of loans was \$424 in 1940 as compared to \$1,054 per farm in 1948.

Summary.—The principal change in the farm organization program of the 67 Annapolis Valley farmers visited was a reduction in the size of the apple orchards. The reduction in size of non-bearing orchards was proportionately greater than that of the bearing orchard. Between 1940 and 1948, the proportion of desirable varieties to all apple trees rose from one in five to one in three.

¹ Man-equivalent is the equivalent of one man working full time on the farm throughout the year.

The total acreage devoted to the cultivation of all crops other than apples remained about the same. Livestock production did not greatly change during this period. The total number of animal units per farm was slightly greater, while a definite increase in poultry took place. At the same time, there was a small increase in pig numbers. This means that while the apple orchards were reduced in size, there was not an accompanying development of any other enterprises on these farms, and the capacity of the average Annapolis Valley farm to provide employment, measured in terms of total man-work units was less in 1948 than in 1940. This is as might be expected in view of the general economic situation prevailing from 1940 to 1948, when apple markets were uncertain.

EUROPEAN RECOVERY PROGRAM: PAID SHIPMENTS FROM CANADA TO ALL COUNTRIES, FOOD, FEED AND FERTILIZERS
APRIL 3, 1948—April 30, 1949

Commodity	Value
	(thousand dollars)
Wheat.....	255,607
Wheat flour.....	59,010
Rye.....	1,116
Bread grains.....	315,733
Meat.....	48,773
Dairy Products.....	9,444
Flaxseed.....	5,747
Other oilseeds.....	460
Linseed oil.....	2,099
Tallow.....	257
Other fats and oils.....	324
Fats and oils.....	8,887
Oats and barley.....	7,362
Oil cake and oil cake meal.....	2,084
Other feeds and fodders.....	506
Feeds and fodders.....	2,590
Fertilizer, Nitrogenous.....	2,587
Fish and fish products.....	1,319
Miscellaneous agricultural products.....	952
Total.....	397,649

All statistics quoted are for *paid shipments*; these are less than the actual movement because of the time lag in the presentation of documents requesting payment. The period covered is from the beginning of aid on April 3, 1948 to April 30, 1949. During this time the total amount of paid shipments of all commodities including U.S. and offshore purchases was \$3,434,300,000. The value of U.S. shipments was \$1,902,896,000 (55 per cent) and of Canadian shipments \$612,325,000 (18 per cent).

For the food and agricultural commodity group the total value of shipments was \$1,825,200,000. The United States contributed goods worth \$1,229,600,000 (67 per cent) and Canada \$397,649,000 (22 per cent).

Canada made shipments of agricultural products to all ERP countries except Sweden, but the United Kingdom was by far the largest recipient. The value of shipments to the United Kingdom was \$362,666,000, or 91 per cent of the total.

¹ The above table supplements information on Canadian agricultural supplies under ERP which appeared in an article by A. E. Richards entitled "The European Recovery Program and Canadian Agriculture". *The Economic Annalist*, Vol. XIX, No. 1: 5-8. Feb. 1949.

REVIEW OF LITERATURE

World Food Appraisal (as of April 1949). Washington, D.C., U.S.A., Food and Agriculture Organization of the United Nations. (Toronto, Canada, The Ryerson Press) May 1949. pp. 47.

The FAO survey found that world food production and supplies in 1948-49 were materially higher than in 1947-48, and the grain export surplus was the largest since 1930-31. The report covers the Far and Near East, Africa, Latin America, Oceania, the United States and Canada, the USSR, and Europe. The appraisal for each area reviewed covers production, consumption and outlook. The report also includes a discussion of the long-term factors.

Food Balance Sheets. Washington, D.C., U.S.A., Food and Agriculture Organization of the United Nations. (Toronto, Canada, The Ryerson Press) April 1949. pp. 311.

Yearbook of Food and Agricultural Statistics, 1948, Volume I—Production. Washington, D.C., U.S.A., Food and Agricultural Organization of the United Nations. (Toronto, Canada, The Ryerson Press) 1949. pp. XVIII + 285.

These two FAO reports fill a definite need. Students and others interested in world statistics will find these two volumes most useful. The objective in drawing up a country food balance sheet "is to show the quantities of all foodstuffs produced in that country; the trade in foodstuffs; their disposition for use as animal feed, as seed, and for manufacture; and, hence, the national supply available for human consumption, together with the nutrient content of the supply. Thus, in one table a complete picture of the movement of the total food supply from the stage of farm production to the point at which it is available to the consumer can be seen and comparisons made with other years".

But as is indicated in the forward, "The balance sheet stops short at the total national supply of food available at the retail level. It does not show in any way how the food supply is distributed among different groups of the population. Dietary surveys are needed to obtain information on variations in consumption among the different groups, as the distribution of food within a country is a matter of considerable importance to the health and well-being of the community".

The *Yearbook* is the second volume of a series issued by FAO. Like the 1947 volume, it continues statistical series on crops and livestock numbers formerly published by the International Institute of Agriculture at Rome. Tables are presented showing area and production figures for the principal crops in the prewar period (generally 1934-38 averages) and in 1945, 1946, and 1947. The livestock numbers given are for the latest prewar year (usually 1939) and for 1945, 1946, and 1947. This edition of the *Yearbook* gives a series of tables showing in detail, for specified countries, utilization of land for crops and the output therefrom, together with detailed classifications of livestock numbers by sex and age groups, where these are available. New to this *Yearbook* is the introduction of tables containing information on total population by countries and on the number of persons engaged in agricultural occupations. Tables have also been added on the production of condensed, evaporated, and dried milk.

Economic Survey of Europe in 1948. Prepared by the Research and Planning Division, Economic Commission for Europe. Geneva, United Nations, Dept. of Economic Affairs. (Toronto, Canada, The Ryerson Press) 1949. pp. XII + 288.

Economic Survey of Europe in 1948, as a successor to *A Survey of the Economic Situation and Prospects of Europe* which was published in May 1948, is the second major study of current European economic conditions to be undertaken by the Secretariat of the Economic Commission for Europe. It reveals that in all respects the year 1948 was one of remarkable progress for Europe.

The report is divided into nine chapters and includes 144 tables, seven charts, and an excellent table showing the Network of Europe's Trade by Individual Countries. These chapters cover: *The Progress in Production; The Progress Towards Internal Equilibrium; the Rate of Capital Formation; The General Pattern of Trade; Prices in International Trade; The Balance of Payments and Overseas Trade; Intra-European Trade and Payments; The Progress in Planning, and Problems and Prospects.*

The background against which *Economic Survey of Europe in 1948* was written differs considerably from that which existed when the previous volume was prepared a year ago. Inflation, the shortages of basic materials and many of the other problems which dominated the immediate post-war period have largely been overcome, and Europe's production and trade are now close to their pre-war levels. But, although economic conditions of life have become more normal, the underlying problems of the European economy do not appear to be appreciably nearer solution. The progress of the past year would in many areas have been impossible without temporary outside financial assistance.

The report states that while the more efficient use of resources within Europe is a prerequisite of improved conditions of economic life, the achievement of stable and sustained progress in the future will depend heavily on developments in the world as a whole.

The report shows that for a group of fifteen European countries which before the war accounted for four-fifths of the total industrial output of Europe (except USSR), the level of output in 1948 was 16 per cent higher than in 1947 and approached the 1938 level. In the last quarter of 1948 their aggregate production exceeded for the first time the average 1938 level. The report points out that from the point of view of living standards, the improvement in the agricultural production of Europe with the 1948 harvest was even more significant than the improvement in industrial production—though agricultural production as a whole is still appreciably below pre-war.

BOWEN, Howard R. *Toward Social Economy*. New York, Rinehart & Co., Inc. 1948. pp. VI + 336.

This book is another contribution in the textbook field. The student in economics is always faced with the problem of deciding what textbook to use, but recently the increase in number has made the task more difficult. Some are excellent and many are poor; some are general and some are highly specialized. The students, by careful selection, can attain the desired balance. One is in full agreement with Dean Bowen when he writes in his preface that, "perspective is indispensable in the study of economics". His purpose "is to present a view of the whole economic system, and at the same time to fit that system into place as one part or aspect of the more comprehensive social fabric".

In content the book is divided into five parts with 31 chapters, and covers a broad area: (1) a statement of what the economic system is and what it does; (2) a description of the institutional setting of economic life; (3) a statement of production theory or the physical basis of economic life; (4) an analysis of the idea of economy in the use of scarce resources and of the conditions necessary for the attainment of economy; and (5) a description of the operation of capitalism in relation to the problem of economy.

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A REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION, MARKETING SERVICE
DEPARTMENT OF AGRICULTURE, OTTAWA

Published by Authority of the Right Honourable James G. Gardiner, Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS

WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year	Wholesale Prices 1935-39=100			Farm Prices of Agricultural Products 1935-39=100	Commodities and Services used by Farmers (a) 1935-39=100		Cost of Living 1935-39=100	
	Farm Products (b)	Field Products (c)	Animal Products (d)		Equipment and Materials (f)	Eleven Factor Index (g)	Farm Living Costs (a) (h)	Urban Living Costs (i)
1913.....					85.4		80.1	79.1
1914.....					90.2	85.3	82.3	79.7
1915.....					96.9	91.6	86.5	80.7
1916.....					101.7	100.5	93.7	87.0
1917.....					140.7	140.5	111.5	102.4
1918.....					164.1	160.2	131.1	115.6
1919.....					169.1	167.9	143.0	126.5
1920.....					190.1	186.5	171.3	145.4
1921.....					147.4	152.5	139.9	129.9
1922.....					124.6	134.1	127.9	120.4
1923.....					118.3	130.6	128.3	120.7
1924.....					122.3	131.9	125.5	118.8
1925.....					123.2	131.8	123.9	119.8
1926.....	144.4	158.5	150.2		119.9	130.6	121.1	121.8
1927.....	138.6	149.4	127.8		119.9	131.2	119.8	119.9
1928.....	136.3	134.3	138.2		118.3	129.3	118.5	120.5
1929.....	140.8	137.2	144.4		117.6	127.9	117.3	121.7
1930.....	119.5	105.8	133.3		105.6	117.0	113.7	120.8
1931.....	78.9	65.0	92.7		92.2	100.9	103.9	109.1
1932.....	65.5	60.4	70.5		89.3	93.3	97.8	99.0
1933.....	69.3	69.3	69.2		88.8	89.8	95.8	94.4
1934.....	83.5	80.5	86.5		96.8	95.5	97.9	95.6
1935.....	89.2	84.4	94.1	88.0	95.6	95.4	97.9	96.2
1936.....	97.9	102.2	93.7	96.9	98.7	98.1	98.3	98.1
1937.....	117.4	128.9	106.0	119.7	108.4	105.3	102.9	101.2
1938.....	102.9	100.9	104.8	105.0	101.2	101.7	101.9	102.2
1939.....	92.6	83.7	101.5	91.8	95.7	99.3	99.5	101.5
1940.....	96.1	85.4	106.7	96.8	101.8	106.8	108.5	105.6
1941.....	106.6	88.9	124.4	110.2	107.8	116.1	114.1	111.7
1942.....	127.1	109.7	144.6	133.1	119.2	131.6	119.0	117.0
1943.....	145.4	129.0	161.8	157.8	122.4	143.4	121.7	118.4
1944.....	155.3	144.5	166.1	172.4	126.0	148.0	122.8	118.9
1945.....	165.3	160.4	170.2	184.2	125.9	152.1	123.2	119.5
1946.....	177.0	172.9	181.2	200.8	128.0	157.0	127.1	123.6
1947.....	189.7	179.1	200.2	212.5	139.5	170.4	138.3	135.5
1948.....	229.6	195.6	263.7	252.5	173.1	196.9	162.8	155.0
1948								
Aug.....	238.2	190.7	285.8	263.9	176.7	203.7	169.5	157.5
Sept.....	236.2	184.6	287.9	261.5				158.9
Oct.....	232.7	184.4	280.9	260.1				159.6
Nov.....	232.4	186.2	278.4	257.8				159.6
Dec.....	233.6	186.7	280.4	259.7				158.9
1949								
Jan.....	232.2	187.7	276.7	257.5	180.3	198.3	171.8	159.6
Feb.....	226.2	186.1	266.3	253.0				159.5
Mar.....	224.2	183.7	264.7	251.3				159.2
April.....	224.5	184.9	264.1	250.7	180.5	202.9	173.5	159.3
May.....	225.2	186.1	264.3	250.7				159.5
June.....	230.2	190.5	269.9	254.5				160.5
July.....	231.4	193.4	269.3	253.7				162.1
Aug.....	225.9	182.4	269.3	253.2				162.8

(a) Revised July, 1948, by The Dominion Bureau of Statistics.

(b) Canada. Dominion Bureau of Statistics, Prices Branch. *Prices and Price Indexes*. (Mimeo). Ottawa, Monthly. Wholesale prices of products of Canadian farms.

(c) Ibid (b). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid (b). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agricultural Division. *Index Numbers of Farm Prices of Agricultural Products*. (Mimeo). Ottawa. Monthly.(f) Canada. Dominion Bureau of Statistics, Prices Branch. *Price Index Numbers of Commodities and Services Used by Farmers*. (Mimeo). Ottawa, Jan., Apr., and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) *Price Index Numbers of Commodities and Services Used by Farmers*. Includes food, clothing, fuel, household equipment, health, maintenance and miscellaneous.(i) *Prices and Price Indexes*. Includes food, rent, fuel and lighting, clothing, home furnishings and services, miscellaneous and retail prices of commodities.

THE ECONOMIC SITUATION

Canada's population as at June 1, 1949 was 13,545,000, an increase of 662,000 over 1948. This increase is due to the entry of Newfoundland into Confederation, and the continued high rate of natural increase and immigration. There were increases in the population of all provinces except Prince Edward Island.

Canada's economy appears to be maintaining a reasonably steady position with little change, allowing for usual seasonal fluctuations, from month to month or from the same periods of the previous year. The index of production has fluctuated March to July within a range of a single point and currently stands at 185.9 (base 1935-39=100). During the past several months no perceptible change in the ratio between factory inventories and shipments has been observed, an indication that goods are moving into hands of the consumers in a steady flow.

Retail Trade.—Sales in the first six months of this year advanced seven per cent, totalling \$3,550,000,000 compared with \$3,306,000,000 in the same period of 1948. On the other hand, commercial failures, according to the Dominion Bureau of Statistics, were more numerous in the first half of 1949 than in any similar period since 1941, but were fewer in number than in 1939. Nearly all branches of business showed increases in failures.

Employment and Wages.—By the third quarter of 1949, the general employment situation in Canada was very favourable. Employment rose to about 5,000,000 during the summer months. Compared with previous post-war years, however, no serious labour shortages existed; rather, there were small labour surpluses in a few sections of the country.

According to preliminary figures released by the Dominion Bureau of Statistics there were further increases in employment and payrolls in leading establishments in the major industrial groups throughout Canada at the beginning of July, advance indexes rising to record levels for the time of year. The general index number of employment, based on 1926 as 100, was 198.3, as compared with 194.5 at June 1, 1949, and 198.0 at July 1, 1948, previously the maximum in the record for the beginning of July. During the war, the highest figure for that date was 183.7 in 1943. Manufacturing, construction and other industries showed heightened activity at the beginning of

July. The reported gains ranged from 0.9 per cent in Saskatchewan to 9.4 per cent in New Brunswick; in Quebec and Ontario the increases amounted to 1.5 per cent and 1.7 per cent, respectively.

There was an increase of 3.2 per cent in the advance general index number of payrolls at July 1 as compared with June 1. The advance figure of per capita weekly earnings of salaried employees and wage-earners reported in the eight leading industries was \$42.82 as compared with \$42.32 at June 1, and \$40.48 at July 1, 1948.

With a larger labour force and higher rates of pay, total labour income for the first six months of the year was \$3,687 million or 10 per cent greater than for the same period last year.

Prices.—Reversing the gradual downward movement shown since the beginning of the year, the general wholesale price index showed a slight advance in July, according to the Dominion Bureau of Statistics. The index for July 1949, on the base 1926=100, was 156.6 as compared with 156.3 in June, and 152.2 for July 1948. Increases in the price indexes occurred for vegetable products, non-ferrous metals, and non-metallic minerals.

Prices received by farmers for their products showed a slight decline. The index of farm prices of agricultural products for July 1949 is 253.9 (1935-39=100) as compared with a revised estimate of 254.5 for June, and 259.2 for the month of July 1948. Compared with a year ago, higher prices for livestock, fruits, tobacco, poultry and eggs were more than offset by declines in the prices of coarse grains, dairy products, potatoes, vegetables and furs. Compared with the previous month, lower prices for grains, particularly in eastern Canada, livestock, dairy products, fruits and vegetables more than offset increased prices for potatoes, poultry and eggs.

Cost-of-Living.—The cost-of-living index advanced to a new high from 162.1 to 162.8 between July 2 and August 1. As in the May to June and June to July advances a rather sharp rise in the sub-index on food prices was the main cause of the upward movement. The food index advanced two points to 209.2, reflecting the higher cost of eggs and some increase in the price of pork products.

From August 2, 1948 to August 1, 1949 the cost-of-living index rose 5.3 from 157.5. During approximately the same period the United States Consumers' Price Index, roughly the equivalent of the Canadian Cost-of-Living Index, declined 3.3 per cent from 174.5 to 168.8.

Foreign Trade.—In the first half of 1949 Canada had a surplus from merchandise trade of \$29,100,000. This compares with \$148,800,000 in the first half of last year and \$324,300,000 in the second half of 1948 when there was an unusual concentration of exports. The increase in the value of imports by Canada was considerably larger than the small increase in Canadian exports. Canadian prosperity and improving supplies abroad made possible greater imports. Reduced demands abroad and seasonal and other factors affecting certain kinds of production led to the lower volume of exports.

Most of the reduced balance of exports in 1949 arises from an increase in Canada's commodity deficit with the United States. The deficit amounted to \$308,300,000 in the first six months of this year compared with \$228,200,000 in the same period last year. A rise in imports from the United States of about 14 per cent was the reason for this as exports to the United States only rose at about half this rate. Another factor contributing the reduced balance of exports with all countries has been the decline in the commodity surplus with the United Kingdom.

The aggregate domestic exports for the first seven months of this year stand at \$1,665,900,000, slightly above the total of \$1,651,000,000 for the same period of 1948.

Crop Production.—Canada's 1949 wheat crop is estimated at 371.6 million bushels. The seeded area is 27.5 million acres yielding at the rate of 13.5 bushels per acre. Although the acreage was considerably above 1948, the total yield was less. Weather was the main cause for the lower yield per acre in 1949 than in 1948.

Cash Income.—Preliminary estimates indicate that during the first six months of 1949 Canadian farmers (excluding Newfoundland) realized a cash income of 1,056.5 million dollars from the sale of farm products. This is a gain of 14.7

per cent over the 1948 cash income of 921.4 million dollars for the same period and an increase of 45.9 per cent above the 724.3 million dollars received during the first half of 1947. In addition to the above receipts, supplementary payments amounting to more than nine million dollars during the first six months of this year were paid out under the provisions of the P.F.A.A. to farmers in the drought-stricken areas of the Prairie Provinces. This figure compares with nearly 10 million and more than 15 million dollars paid out during the respective periods of 1947 and 1948. With the exception of Prince Edward Island and New Brunswick, cash income by provinces from the sale of farm products was higher for the first six months of 1949 than for the same period in 1948.

Currency Devaluation.—The Minister of Finance, on Monday, September 19, stated in the House of Commons:

The substantial devaluation of currencies throughout the sterling area, and in many other countries as well, cannot fail to have important implications for our balance of payments position. Many of our exports are bound to face increased price competition in both the non-dollar and dollar markets. At the same time the extensive exchange adjustments abroad will tend to result in an increase in the total value of our imports. While we stand ready to co-operate with the efforts of overseas countries to expand their sales to us we cannot receive more imports from all sources without going into deficit in our international accounts.

In these circumstances the government has decided to adjust the exchange value of the Canadian dollar to the extent considered necessary.

Canada's basic position will continue to be strong. Our exports have been and will continue to be competitive. Our production is efficient and our costs are relatively low. Because of these underlying factors the government has felt that an adjustment of 10 per cent is appropriate. Such a change requires consultation with but not the approval of the International Monetary Fund. This consultation took place today. An order in council has therefore been passed adjusting our exchange rates on the basis of a 10 per cent premium on the U. S. dollar. The chairman of the Foreign Exchange Control Board has been instructed to advise all authorized dealers and agents of the board that rates effective as from the opening of business Tuesday, September 20, will be as follows:

	Buying Rate Selling Rate per U.S. dollar	
U. S. dollars.....	\$ 1.10	\$ 1.10½
	per £	
Sterling	3.07½	3.08½

CANADIAN FARMERS MECHANIZE

FRANK SHEFRIN

Canadian farmers purchased over \$740 million worth of farm machinery and equipment¹ in the eleven year period, 1938-1948 inclusive. Expenditures since 1946 have broken records each year. This mechanization of agriculture was stimulated by a scarcity of farm labour during the war years 1939-45, by the relatively high farm wage scales, by the uncertainties and economic risks incident to use of transient labour in harvesting crops with high market value, and by the increasing total cash income received by farmers. The remarkable expansion in total purchases during the 1946-48 period is also in part due to the unfilled needs carried over from the depressed thirties² and the rationing program of the war years³.

The Prairies are physically suitable for rapid mechanization. Prairie farmers purchased more farm machinery than any other regional group. In the eleven year period under consideration, total expenditures at wholesale value amounted to \$451 million or about 60 per cent of Canadian expenditures. On a provincial basis Saskatchewan farmers are the heaviest investors. In Eastern Canada, with its smaller farms, rapid mechanization is being made possible by the introduction of smaller types of equipment.

Sales of Farm Machinery.—In 1938 total sales of farm machinery and implements at wholesale levels were valued at \$36 million; in 1948 the total was \$168 million, an increase of 363 per cent. However, the increase in the volume of sales was not as great. The higher values also reflect increased prices.⁴ The volume increase is estimated at about 240 per cent.

It is often easier to visualize the extent of expenditures if one thinks in terms of a farm. Using wholesale values as published by the Dominion Bureau of Statistics, the agricultural industry spent \$50 per farm on new machinery in 1938 and \$237 in 1948. These averages varied from province to province. In 1938 Manitoba farmers spent \$129 per farm, in 1948—\$416; Saskatchewan, \$55 per farm in 1938 and \$360 in 1948; and Alberta, \$91 per farm in 1938 and \$408 in 1948. The farmers of Ontario made a poor fourth with \$43 per farm in 1938 and \$215 in 1948. The Maritime Provinces during the 1938-48 period spent the least on farm machinery. If the value of repair parts purchases is added there is a substantial increase in cash expenditures.

The per farm expenditures do not tell the complete story. Not all farms are commercial producers. In 1940 about 28 per cent of Canada's farms sold only

¹ Annual reports on the sales of farm implements and equipment in Canada, based on returns submitted by Canadian manufacturers and importers of foreign makes, have been compiled and published by the Dominion Bureau of Statistics since 1936. Each manufacturer is asked to report only sales of his own manufacture and sales of equipment which he imported. Sales of any machines or equipment purchased from other Canadian suppliers are excluded. Manufacturers' sales have been supplemented by sales of firms which imported machinery directly from other countries. The figures reported relate to sales made to Canadian customers only; export sales have been excluded. The Bureau publishes wholesale values but supplementary figures giving the average mark-up as shown by reporting firms indicate that the sales figure quoted at wholesale prices should be increased by about 21.5 per cent to bring it to a retail value. This would make the above total equal to \$900 million.

² Evidence of the effect of low incomes in capital outlay during the thirties is given in the restricted expenditures on equipment. In 1928, farmers invested \$93 million in farm machinery and equipment; by 1933 the total had dropped to \$19 million. (Canada, Dominion-Provincial Conference on Reconstruction. *Public Investment and Capital Formation. The Study of Public and Private Investment Outlay, Canada 1926-41*. Ottawa, The King's Printer. 1945.)

³ Sales in 1943 were restricted by rationing to a total of \$29,796,560 at wholesale values.

⁴ The index number of prices of farm machinery in 1938 was 104.1 (1935-39=100). In 1948 it was 141.6, an increase of 36 per cent.

eight per cent of the marketable produce.¹ If we considered commercial farms only, the average purchases per farm would be considerably higher.

Types of machinery purchased have changed as new improved equipment became available. Tractors and harvesting equipment made up the most important sales. In 1947, sales of tractors at wholesale prices amounted to \$41.5 million, and of harvesting machinery, \$22.5 million. In actual numbers 232,397 tractors and 59,182 combines were sold in Canada during the 1938-1948 period.² Sales in the West were greater than in the East, totalling 143,608 tractors and 52,545 combines. For the year 1948 the number of tractors and combines sold in Canada was 44,186 and 11,913 respectively. Again let us break these totals down to a workable unit, say, per thousand farms. During the eleven year period under consideration a total of 317 tractors, and 81 combines were purchased per 1,000 farms.

The sales of spraying and dusting equipment increased very markedly between 1938 and 1947—from \$45,500 to \$988,761. Sales of domestic water systems and pumps also showed a remarkable expansion within the ten years. Dairy machinery and equipment purchases in this period increased from \$1.9 million in 1938 to \$5.0 million in 1947 (with a record high of \$6 million in 1946). The number of milking machines sold in 1938 and in 1948 totalled 484 and 11,580 respectively.

Until now we have discussed purchases. But to evaluate the importance of these purchases they must be related to total investment.³ Increased purchases are reflected in higher total investment in farm implements and machinery in Canada and in all provinces since the immediate pre-war years. For the year 1938 the total value was \$475 million compared with \$671.0 million in 1947. On a total value basis, Ontario had the largest investment (since 1940) followed by Saskatchewan.

On a per farm basis, the relationship is different, with each of the three Prairie Provinces having a greater investment than Ontario. On the Prairies the average investment in farm implements and machinery per farm increased from \$835 in 1938 to \$1,281 in 1947; for Canada, as a whole, from \$649 to \$950.

What equipment did the Canadian farm have in 1931 and in 1941? Mechanization of Canadian agriculture increased even under the difficult conditions of the thirties. The Prairie Provinces led in this movement. Total number of trucks in Canada increased by 60.1 per cent between 1931

¹ Professor Burton, in an article entitled "Farmers' Share of National Income", in the May 1948 issue of the *Agricultural Institute Review*, has this to say about the number of commercial farms:

"The census, with some double counting, estimates that there are 732,000 farms in Canada. Included among these are 40,000 part-time farms, that is farms on which, during 1940, the operator received more than 50 per cent of his gross income from non-farm sources. Rejecting these part-time farms as not being commercial farms we have some 690,000 farms which provide the operator with the greater part of his gross revenue. But of these remaining farms the census classifies 195,000 or 28 per cent as being subsistence, or combination of subsistence farms. These are respectively defined as farms on which more than 50 per cent of the gross product is consumed by the farm family, and farms on which the value of products consumed on the farm plus the receipts from one other enterprise are required to constitute 60 per cent of the gross product. . . . In 1940 this 28 per cent of our farms contributed only 8 per cent of the gross sales of all full-time farms".

In this article, unless stated otherwise, calculations are based on total number of farms as reported in the 1941 and the 1946 census.

² *Canadian Farm Implements*. January 1948 and 1949, February 1949.

³ Thus, on the average, during the past eleven years farmers purchased equipment worth \$67.3 million annually and the average capital investment in machinery and equipment over the period 1938-47 was \$571.6 million.

and 1941. The number of tractors¹ including those under, as well as over, 15 horsepower, showed an increase of 51.6 per cent, and the total number of combines increased by 113.2 per cent during the same period. In 1931 the number of farms reporting tractors totalled 97,262; in 1941, 152,607. In each of these census years these farms had 105,360 and 159,752 tractors respectively. By 1946 the *Census of the Prairie Provinces* showed that a similar number of farms—139,278 in Manitoba, Saskatchewan and Alberta—reported having nearly the same total—151,145 tractors.

How much equipment is there on Canadian farms today? The answer will have to wait for the 1951 Census. However, we can safely venture an estimate that the number is considerably greater in Canada, as a whole, and especially on the Prairies than it was in 1941 and 1946.

Investment in 1949 in agricultural machinery and trucks may exceed similar expenditures in 1948 by about 30 per cent. During the first six months of 1949 there were 19,000 loans made under the Farm Improvement Loans Act amounting to \$16 million for the purchase of machinery worth about \$27 million. These purchases included 10,000 tractors.²

Regional Developments.—Description of trends for Canada as a whole or even a breakdown on a provincial basis does not indicate adequately the impact of mechanization on local areas. Some idea of this impact may be obtained from a number of farm management studies made by the Economics Division, Dominion Department of Agriculture in Alberta, Saskatchewan, Manitoba and Ontario.

A comparative study for the two years 1931 and 1946 in the short grass prairie zone of Southeastern Alberta³ shows that twenty years ago about 50 per cent of the farms depended on horses for draft power, whereas today over 95 per cent use tractors.

What are some of the other changes in this region? Replacing the mould-board plough, the one-way disc plough has become the main tillage implement in the short grass region of Alberta. Combine-harvesters are found on almost three-quarters of the farms, whereas only one-third had them in 1931. Although there were not quite as many cars on farms in 1946 as in 1931, the number of trucks had almost doubled.

This increase in mechanization has increased the efficiency of farm labour. The author of the Southeastern Alberta study points out that:

The labour equivalent averaged 1.67 man units per farm in 1931 as compared with 1.38 in 1946. In terms of crop acres handled per man, this worked out to 325 crop land acres in 1931 as against 556 in 1946. With the disappearance of horses and the advent of large power machinery, the efficiency of farm labour on prairie wheat farms has increased by more than 50 per cent.

¹ *The Census of Canada (Vol. VIII Agriculture)* lists only a limited number of items reported on farms. However, the number of tractors does indicate the extent of mechanization. The tractor, more than any other force, has brought an industrial revolution to our farms, especially to those of Western Canada which were among the first to use the machine. The tractor is important because it combines added power with machinery that can do work which is not possible with horse power. The tractor brings greater drawbar power. Belt pulleys on tractors make mobile power for work which would otherwise need a stationary engine.

² For the past four years of operations under the Farm Improvement Loans Act the farmers in the Western Provinces have used the facilities to a much greater extent than the farmers in the East. However, this Interim Report shows that loans in Ontario have increased 68 per cent, Quebec 132 per cent and the Maritime Provinces 99 per cent as compared with 31 per cent increase in the Prairie Provinces. Since loans amounting to \$16 million out of \$18 million were for the purchase of farm machinery, it is safe to assume that these sales in Eastern Canada in 1949 are increasing more rapidly than in Western Canada.

³ Short grass prairie region, or the brown soil zone, comprises about twelve million acres in the southeastern corner of Alberta. It extends into the southwestern section of Saskatchewan where it covers a much larger area than in Alberta. The 1931 study was made near the town of Bow Island, about forty miles west of Medicine Hat, and the 1946 study was made near the town of Foremost, located about twenty miles south of Bow Island. For details, see article by S. Mysak, "Changes in Farming Pattern in Southeastern Alberta". *The Economic Annalist*. April 1949, pp. 41-43.

Another study in Alberta covered the Innisfail, Drumheller and Gadsby¹ areas in Central Alberta in 1944. Capital invested in machinery on Drumheller area grain farms, for example, made up more than 15 per cent of the total for the farms in 1943-44. It amounted to nearly \$4,400 per farm or \$8 per cultivated acre. In these three areas the value of farm machinery and equipment on farms up to 400 cultivated acres averaged approximately \$2,000 per farm whereas on farms of more than 400 cultivated acres it was over \$5,000. The investment per acre cultivated was much smaller on the larger farms, averaging \$7 per acre compared with less than \$9 on the smaller farms.

The author also points out in this survey that:

With farms of comparable cultivated acreage the investment in machinery and equipment, as well as buildings, was considerably higher on livestock, than on the grain farms. The value of farm machinery and equipment on livestock farms of 201 to 400 cultivated acres in size, averaged more than \$11.00 per acre while that of machinery on grain farms of the same acreage averaged about \$9.00.

A survey of farming on bushlands near Debolt in the Peace River country in Alberta covering two periods 1942 and 1945, reveals that settlers were utilizing surplus cash for the purchase of much-needed machinery and were thus able to avoid delays necessitated by having to borrow a plow, drill or binder from a nearby neighbour. With more equipment, the operator is preparing himself for eventually handling larger improved acreages. Between 1942 and 1945 the value of machinery increased from \$497 to \$907 per farm.²

Studies of Saskatchewan farms show similar trends. To show changes and extent of mechanization on Saskatchewan farms, a comparison was made of the kinds and numbers of machines and equipment in use in the 1926-32 period and the 1939-1941 period.³ In spite of adverse conditions such as crop failures and wide fluctuation in farm income, many changes have been brought into effect. The degree of mechanization was greatest on the superior classes of land (Land Classes III and IV), there being a definite relationship between numbers of special equipment and predominant land class.

More detailed information is available for specific areas. A study was made in the Elrose-Rosetown-Conquest area in the summer of 1944.⁴ This area in west-central Saskatchewan is a typical prairie area, comprising relatively large representative blocks of each class of wheat land and lands unsuitable for cereal production, better adapted to grazing purposes. A comparison was made of the changes in power and equipment between the years 1939 and 1943. The report points out that:

During 1943, 69.5 per cent of the farmers used tractor power only as compared with 46.8 per cent in 1939. In these respective years, 14.5 and 24.3 per cent used a combination of tractor and horse power, while 3.1 and 1.9 per cent hired all field work done. The proportion of farms using horses only, as a source of power decreased from 27.0 per cent in 1939 to 12.9 per cent in 1943, and was one of the most important changes in this area.

Practically all the farm operators on the clay and heavy clay soils used tractors only while even in the areas of lighter textured soils approximately half of all farmers were in this class. Farmers using horses only as a source of

¹ Spence, C. C. *Farm Business in Central Alberta*. Ottawa, Dept. of Agriculture, Economics Div. Pub. 823. Tech. bul. 73. July 1949. pp. 16; 28.

² Acton, B. K. *Farming on Bush Lands at Debolt-Peace River, Alberta, 1945*. Ottawa, Dominion Dept. of Agriculture, Economics Div., in co-operation with the Dept. of Political Economy, University of Alberta. Processed. February 1949. p. 14.

³ Stutt, R. A. "Changes in the Extent and Effect of Mechanization". *The Economic Annalist*. August 1944. pp. 57-62.

⁴ Stutt, R. A. "Wartime Changes on Farms in the Elrose-Rosetown-Conquest Area of Saskatchewan". *The Economic Annalist*. November 1945. pp. 79-83.

... *The Pattern of Mechanization and Wartime Changes on Farms in the Elrose-Rosetown-Conquest Area of Central and West Central Saskatchewan, 1944*. Processed. Ottawa, Dept. of Agriculture, Economics Div. November 1948.

power usually operated three-quarter-sections of land or less. The use of horses was confined only to supplementing the tractor in rush periods on farms having between 400 and 700 acres of cropland.

The percentage of farmers using tractors ranged from 30.1 per cent for the group of farms with less than 250 crop acres to 89.8 per cent for the group having over 850 crop acres.

During this period there was an increased use of the combine as compared with the thrasher. In 1943, 88 per cent of the farmers in the survey sample, combined their crops either with or without a swather, as compared with 58 per cent in 1939. The main increase was in the method of straight combining and not in swathing and combining with the aid of a pick-up attachment.

The same report indicates that the larger the farm, the more highly mechanized.¹ The number of tractors per 100 farms increased from 50 for farms of less than 250 acres to 159 for farms averaging over 850 acres of cropland. One-way discs increased from 32 to 139 for the same size groups respectively. Other representative kinds of machines were trucks, which increased from 25 to 114, and automobiles, which increased from 47 to 87 per 100 farms.

Another study in Saskatchewan was conducted in the Cory-Asquith-Langham area of west-central Saskatchewan.² The extent of mechanization was correlated with the productivity³ of the land. The following table shows the relationship.

Table 1.—Numbers of Special Farm Equipment per 100 Farms According to Land Class, Cory-Asquith-Langham Area, 1943⁽¹⁾

	Land Class I	Land Class II	Land Class III	Land Class IV
Number of Farms	140	172	149	31
	—numbers per 100 farms—			
Tractors.....	46.4	50.6	73.8	80.6
One-way Discs.....	20.7	42.4	45.0	58.1
Combines.....	4.3	7.6	26.2	38.7
Threshing Machines.....	17.1	21.5	31.5	25.8
Trucks.....	22.1	27.3	36.9	48.4
Automobiles.....	47.9	55.2	68.5	67.7
Milking Machines.....	8.6	9.3	8.1	12.9

(1) Stutt, R. A. *A Farm Business Study with Particular Reference to the Relation of Farm Types and an Economic Classification of Land, Cory-Asquith-Langham Area, Saskatchewan, 1943*. Processed. Ottawa, Dept. of Agriculture, Economics Div. 1949.

Mechanization in the northern park and wooded areas of Saskatchewan has during recent years proceeded at a rapid rate.⁴ Mechanization has reached

¹ A similar conclusion is drawn in an article appearing in *The Economic Annalist*, June 1949, and entitled "A Study of the Farm Business in Southeast Saskatchewan" by Gordon Haase. The author states "Certain aspects of farm organization change as size of farm increases and result in an increased efficiency that contributes to the larger financial returns obtained on these farms. The ratio of capital to labour and, particularly the ratio of farm machinery to labour, is significant in this regard, reflecting an uneconomic substitution of labour for capital on the smaller units. The ratio of machinery investment per man-equivalent, for example, ranges from \$1,460 on farms with less than 100 cultivated acres, to \$3,710 for farms having 500-599 cultivated acres.

² Stutt, R. A. *A Farm Business Study with Particular Reference to the Relation of Farm Types and an Economic Classification of Land, Cory-Asquith-Langham Area, Saskatchewan, 1943*. Processed. Ottawa, Dept. of Agriculture, Economics Div. 1949.

³ The economic classification of land in Western Canada sets out areas using a unit as small as a quarter-section of land which would be better used in grazing and those in which the most profitable use is in grain production. The average long-time wheat yields running back to 1921 is one of the criteria used as a basis of determining the relative productivity of the land. The productivity of land is indicated by reference to the terms Land Class I, II, etc. with greater productivity in the upper classes.

⁴ Stutt, R. A. "The Economic Aspect of Land Use in Saskatchewan". *The Economic Annalist*. October 1949. p. 109.

the smaller farms particularly with respect to power. In methods of harvesting, combining appears to be well on the way to supplanting the binder and thresher even in the parkland areas.

A study of 216 farms in southwestern Manitoba¹ (Reston, Melita and Bois-sevain districts) during the year 1945-1946 indicated that the average value of machinery and equipment per farm amounted to \$2,858.

There are few similar recent studies available for Eastern Canada.² Information was obtained in 1948 on the same group of 142 farms visited in 1938 in nine counties of Eastern Ontario.³ These farms averaged 190 acres in 1938 and 202 acres in 1948. The value of machinery and equipment averaged \$1,424 per farm in 1938 and was 12 per cent of the total farm investment. In 1948 the value averaged \$3,101 and was 16 per cent of the total farm investment. Of the 142 farms, 38 reported tractors in 1938 and 90 in 1948. A similar change has taken place in the number of farms that have milking machines. Information on this item was available on 67 of the 142 farms. In 1938 twenty-two of these had milking machines and, in 1948, forty-six. Increased mechanization has resulted in greater output per man. The labour supply on these farms was lower in the latter year with the average number of man-equivalents per farm dropping from 2.3 to 1.9. The number of cropped acres per man-equivalent increased from 38 to 44.

Information on the extent of mechanization in Eastern Canada was made available at a meeting of the Eastern Section of the National Committee on Agricultural Engineering.⁴

Papers delivered at this meeting revealed that hay harvesting methods and equipment have changed more in Eastern Canada than may generally be realized. For the most part these changes have taken place over the last 10 to 12 years. Prior to the war sales of hay mowers totalled six to seven thousand per year in Eastern Canada and the majority of these were horse-drawn machines. In 1947, with an improved selection of equipment available, Eastern sales were 9,611 mowers of which 7,596 were horse-drawn mowers and 1,479 tractor-mounted mowers. Pre-war sales of dump rakes numbered four to five thousand and of side delivery rakes 600 to 800, per year. In 1947 however, sales were 6,396 dump and 2,500 side rakes. For hay loaders, pre-war sales ranged from 1,500 to 2,000 while in 1946-1947 sales ran from 3,500 to 3,600. For the larger, and possibly somewhat more specialized haying equipment, the situation is rather different, in that there has been a relatively limited farm distribution of such equipment. From 1939 to 1946 about 350 pick-up balers were sold in Eastern Canada; but 344 were sold in 1947 alone and during 1948 an increasing number, possibly 50 per cent, have been automatic twine or wire tie machines. Similarly the number of forage crop harvesters sold in Eastern Canada was about 25 units up to 1945. There may have been 200 units in use in 1948.⁵

Another paper indicates that, apart from one or two unsuccessful attempts to introduce western style combines into Eastern Canada in 1927 and 1928, combines made their first appearance in the East in 1937 with the sale of 31

¹ Sinclair, Sol and Blaich, O.P. "The Economic Organization of Farms in Southwestern Manitoba". *The Economic Annalist*. November 1947. pp. 81-86.

² In a study entitled *Farm Organization and the Cost of Producing Apples in the Annapolis Valley of Nova Scotia*, by B. A. Campbell (processed report April 1946, Economics Div., Dominion Dept. of Agriculture, Ottawa), it is pointed out that on 57 Annapolis Valley farms studied, the value of farm machinery increased from \$1,590 per farm in 1929-31 to \$1,933 in 1940.

³ This report is being prepared for publication by the Dominion Dept. of Agriculture, Economics Div., Ottawa.

⁴ *Proceedings of the Eastern Section, National Committee on Agricultural Engineering*. Confederation Building, Ottawa. February 28, March 1 and 2, 1949. Mimeo. We have drawn considerably on speeches made at these meetings.

⁵ Armstrong, J. M. "Hay Harvesting and Storage". *Proceedings of the Eastern Section, National Committee on Agricultural Engineering*. pp. 20-22.

Eastern style machines largely five and six foot cut, capable of handling the necessary volume of straw and of harvesting a variety of crops other than grain. By 1939 there were 401 combines in use in Eastern Canada. Apart from four in Quebec and 10 in the Maritimes the balance was in Ontario. During the recent war and post-war period, labour shortages supplied the impetus for rapid swing to the combine. By the end of 1948, there were 190 combines in the Maritimes, 260 in Quebec and 6,187 in Ontario, totalling 6,637 in Eastern Canada. While these figures are impressive, it must be remembered that there are still two threshers to every combine in Ontario, 25 threshers per combine in the Maritimes and 160 to one in Quebec.¹

Cash Income and Machinery Purchases.—Variations in investments in capital goods by farmers are associated with fluctuations in cash income. A brief review of available data in Canada bears out this point. In 1928 cash farm income was \$1,072.5 million² and farm machinery purchases were estimated at \$93 million.³ In 1933 cash farm income was \$402.0 million, and farm machinery purchases were an estimated \$9 million. In 1948 cash income (including supplementary payments), was \$2,470.6 million, and farm machinery purchases at retail values totalled \$203.7 million.⁴

Unfortunately there is as yet insufficient data to run a correlation analysis. Walter Wilcox in reviewing the United States experiences makes the point that:

Farmers' purchases of capital goods since 1910 indicate quite clearly . . . that investment in capital in agriculture is, closely related to current income rather than to variations in interest rates, prospective income, or dates when improved machines were perfected.⁵

In addition to higher incomes, more adequate credit facilities have been made available in the post-war years. The Farm Improvement Loans Act⁶ has made possible a greater supply of intermediate term credit at a lower rate of interest. Most loans, both in number and value, made under the Act in 1948 were for the purchase of farm implements and farm trucks. This was also true for 1947. Loans in 1948 for this purpose represented 87.7 per cent of all loans made and amounted to \$26,759,107. This represents an actual sales volume of \$45,419,094 for farm implements and farm trucks.

¹ Armstrong, J. M. "Grain Harvesting and Storage". *Proceedings of the Eastern Section, National Committee on Agricultural Engineering*. pp. 23-24.

² Canada, Dept. of Trade and Commerce, Dominion Bureau of Statistics, Agricultural Div. annual reports: *Cash Income from the Sale of Farm Products*.

³ For estimates of gross investment in farm machinery and equipment see Table 6a, p. 41 of report entitled *Public Investment and Capital Formation, A Study of Public and Private Investment Outlay, Canada 1926-41*. Prepared for the Dominion-Provincial Conference on Reconstruction in Ottawa 1945. An explanation of the method of estimating is given on p. 107, item 8.

⁴ Canada, Dept. of Trade and Commerce, Dominion Bureau of Statistics, Industry and Merchandising Div., *Sales of Farm Implements and Equipment in Canada, 1948—Preliminary Report*. Ottawa, 1949. The above figure is an estimate at the retail level arrived at by adding a mark-up of 21.5 per cent to \$167.7 million.

⁵ Wilcox, W. W. "Capital in Agriculture". *Quarterly Journal of Economics*. November 1943. p. 53.

In the same article Wilcox says "Resource use is definitely less efficient, as a result of inadequate capital, on these farms (low incomes, small farms, and large families) as compared with farms where the pressure for the use of income for family living is less. This causes the gap in incomes to widen and progressively grow wider. Low income affects and reduces further investment in maintaining the productivity of the soil, livestock breeding herds, and farm equipment". p. 55.

⁶ The Farm Improvement Loans Act was proclaimed and came into force on March 1, 1945. The primary purpose of the Act was to fill a gap in the credit system which has been developed in Canada to meet the needs of agriculture. That gap related chiefly to the provision of intermediate credit, and certain types of short term credit, to farmers for the improvement and development of farms and for the improvement of living conditions thereon. It aims, moreover, at providing credit in a form and under terms and conditions which are convenient and suited to the needs and conditions of the particular farm borrower. Farm Improvement Loans are made by the chartered banks, which are guaranteed against loss by the Government up to ten per cent of the aggregate principal amount of loans made by each bank.

In the three Prairie Provinces during 1948 approximately 46.1 per cent of all tractors sold were financed under this Act, 45.4 per cent of all combines and 63.4 per cent of all threshers. In the whole of Canada approximately 28.9 per cent of all tractors were financed under the Act, 40.9 per cent of all combines and 38.9 per cent of all threshers. A total of 26,711 farmers used the facilities provided under the Act for the purchase of farm implements and farm trucks.

The Annual report covering activities under the Act for the year ending December 31, 1948, has this to say:

This wide use of the Act by farmers for financing the purchase of farm implements and farm trucks is highly significant. It indicates that the Act is not only reducing the cost to farmers of obtaining temporary financing for this purpose but is also helping to reduce distribution costs to the implement companies, a fact which should be reflected in the prices of the implements themselves.

Summary.—Economic conditions significantly influence the rate of farm mechanization. During the depression years farmers were hard hit and made every effort to avoid new capital outlays. During World War II mechanization was held back because of lack of supplies rather than lack of capital. In the post-war years, mechanization has been particularly rapid as funds became generally more available for purchase of the increasing supply of labour-saving equipment.

Greater mechanization of farm operations means greater efficiency in production.¹ It also means "less drudgery and more comfortable working conditions."² But it means greater cash operating expenditures. The tractor fuel bill in 1948 was 253 per cent greater than in 1938; repairs and parts expenditures increased during the same period by about 200 per cent. Depreciation charges during the same period increased by 37 per cent.³

Farmers today are better stocked with power and equipment in relation to cropland area than at any other time. They are likely to continue to add to machinery and implement inventories as long as farm incomes remain high.

¹ A study made in the United States entitled *Progress of Farm Mechanization* by Cooper, Barton and Brodell (Misc. Pub. No. 630, U.S.D.A., Washington, 1947) draws conclusions that, in general, are applicable to Canada. (p. 80) They point out that:

"The evidence developed in this publication seems to point conclusively to the fact that a very large part of the increased efficiency in agricultural production in the past, or the increase in output per unit of input, has been caused principally by increased production per acre and per animal rather than by decreased total physical expenditures. Initial savings in labour and other costs of producing farm-animal power have been used to produce more milk, more pork, and more of other livestock products for the market. Labour saved because of greater speed in doing farm jobs by the use of modern machines has not always meant the release of farm workers. Rather, the large volume of business developed through the introduction of more intensive enterprises, and through more production per acre and per animal, has absorbed much of the labour that would have been released because of mechanization.

"Further increases in efficiency of farm production are desirable and will continue. If past patterns continue in the future march of farm technology, increases in efficiency will be closely related to increases in total volume of farm output.

"Production efficiency and the relationships between prices that farmers receive and the prices they pay will continue to be dominant factors in determining the economic welfare of farm people. Expanded markets for farm products must accompany increases in production efficiency if both producers and consumers are to benefit to the fullest extent".

² For a more detailed discussion on this point, see "Roundtable on Effects of Technological Changes on Cost Reduction in Agriculture: Recent and Prospective Changes" by Glen T. Barton. *Journal of Farm Economics*. February 1949. p. 444.

³ See Dominion Bureau of Statistics reports showing net income of farm operators from farming operations.

Agricultural production in Canada in 1948 was higher than in the preceding year, but was down somewhat from the all-time high reached in 1942, according to the first release of a new series of index numbers of agricultural production by the Dominion Bureau of Statistics.

THE ECONOMIC ASPECTS OF LAND USE IN SASKATCHEWAN

R. A. STUTT

Saskatchewan has a relatively high proportion of the arable land of Canada. This is significant in determining the economic and cultural progress of farmers in Saskatchewan and in Canada as a whole. Because of these land resources, a large share of the responsibility of agriculture in Canada for providing foods and fibers at fair and reasonable prices falls on Saskatchewan farmers. They also have the responsibility, as custodians, for maintaining the productivity of this basic resource. But the use of the land in Saskatchewan is also of national concern.

While the "four physical frontiers of agriculture", temperature, moisture, topography and soil, still determine the absolute limits of cultivability or physical production, they now operate less directly with each successive increase in technical skill. The effects of physical limitation in use of land have been modified, to some degree, by improved plant breeding with quick maturing varieties, mechanical devices to speed up and improve farm work, irrigation and drainage, summerfallowing and other cropping practices, fertilizers, improved cultivation practices, and greater bacteriological knowledge. The extent to which agriculture is actually developed is determined within the physical limits by social and economic factors, by population pressure and particularly by the standards of living.

The Characteristics of Saskatchewan's Agricultural Resources.—The occupied farm area in Saskatchewan is 59.4 million acres or approximately one-half of the Prairie Provinces and one-third of the Dominion. Due to the general open and level nature of the settled prairie area, it has been relatively easy to break up the land and in 1946 the improved area amounted to 35.6 million acres. This was nearly two-fifths of the improved land in Canada and was split up into approximately 110,000 farms or slightly more than 15 per cent of the total farms in Canada. Field crops normally utilize about two-fifths of the improved land and summerfallow approximately one-third. The unimproved part of the occupied farm lands is mainly native pasture while a relatively small part is classed as woodland or waste.

Wheat is the major field crop. During the 10-year period from 1938 to 1947, the average acreage was 13.3 million acres with an average production of 206.5 million bushels. During the same period, oats occupied an average of 4.7 million acres with a production of 134.4 million bushels while barley averaged 2.2 million acres with a production of 48.3 million bushels. Other secondary crops in Saskatchewan are flax and rye while crops such as alfalfa, field peas and rape have assumed some importance in the northeastern part of the province.

An important and desirable development has been the increase in alfalfa acreage. In the 1935-39 period, alfalfa was grown on only an average of 22 thousand acres. Since 1943 this crop has averaged about 125 thousand acres.

Crop specialty farms are generally dominant in all parts of Saskatchewan because of the relative ease of production of grain. Livestock production has generally taken a secondary position. This is due largely to the comparative advantage of large scale grain growing through the development of better mechanical equipment and power, and the high percentage of arable land in large blocks. Distance to market is another factor favouring grain production.

Relatively large numbers of livestock, however, are found in Saskatchewan. In 1947, one-quarter of Canada's horse population, nearly one-seventh the cattle population, about one-tenth the swine population and one-tenth the sheep population were found in Saskatchewan. A few head of cattle, a sow and a litter and a couple of horses are usually found on all farms. For cattle, the concentration is in the east central part; for swine the northern section, especially the northeastern; for sheep, the southwest; and for horses, the east central part. Cattle are most common where arability of farm areas is relatively

low and coarse grains enter into the typical cropping picture, and swine where feed grains supplies are usually abundant.

Farms are relatively large in Saskatchewan. The average farm in 1946 was 473 acres with 330 acres of cropland. Nearly one-quarter of all farms are found in the Brown Soil zone and average about 500 acres of cropland in size. Slightly more than one-quarter are located in the Dark Brown Soil zone, the other part prairie region, and average about 460 acres. Over one-quarter of all farms are found in the park belt and these average about 250 acres of cropland. In the more recently settled wooded areas, farms average about 150 acres of cropland. This takes up slightly more than one-fifth of all farms. The distribution of farm size indicates that half-section farms (320 acres) are still the most common. These include between one-quarter and one-third of all estimated farm units. About one-half of all farms in the province are either one-half section or one-quarter section farms. Three-quarter-section to five-quarter-section farms approximate about one-third of all farms while farms over this size include about one-sixth of all farms. This increase in size of farm is one of the most significant developments in Saskatchewan.

Climate in Saskatchewan operates in a generally restrictive character as regards land resource utilization. The moisture limitation results in the primary adaptation of cereal cropping, mainly wheat, and limits the choice or selection of alternative crops, mainly forage and specialized crops, especially for the major part of the province. The alternatives of livestock production are likewise limited by the climatic factor because of problems which impinge on feed supply. Productivity of resources is essentially low because of the climatic and physical factors. Wheat yields are usually an average of less than 15 bushels per acre. This varies¹ from about 10-12 bushels for most of the prairie area to about 15-17 bushels for the productive clay loams and clay soils of the prairies and the transitional prairie and park areas to averages up to about 20-25 bushels for the more favourable northeastern sections.

Agricultural Capacity of Saskatchewan.—While the period of rapid settlement and large increases in agricultural capacity through land improvement is over in Saskatchewan, a gradual growth is discernible. There is a continuous extension of cultivated land, particularly in the wooded and northern regions. Along with a very limited amount of further settlement, there is a considerable volume of clearing and breaking on established farms. Favourable income conditions and the recent availability of larger scale mechanized clearing equipment² have supplied the impetus.

In prairie areas there is a trend to break up small pastures on farms. This method of increasing cropland might result in unfortunate consequences because these pastures are often on land of submarginal type. More serious in prairie areas has been the increase in cultivated acreage through the re-cultivation of lands abandoned during the 1930's. The program of economic classification of land carried on by this Division points to the unfortunate aspect of this development.

On individual farm units much of the increase in cropland acreage in northern areas has been by improvement of land already possessed in contrast to the purchase or renting of additional land in prairie areas.³

The threat of soil deterioration⁴ is becoming serious in many areas. While the earlier threat of wind erosion, common in the 1930's, appears to be checked

¹ The relatively good wheat yields of the heavy clay and clay loam soils as compared with lower yields of loams and the "light" textured soils has been pointed out in several land classification reports published by this Division.

² Andal, M. E. *Use of Power Machinery in Bushland Improvement in Northeastern Saskatchewan*. Ottawa, Dept. of Agriculture, Economics Div. Pub. 814. November 1948.

³ Andal, M. E. *Changes in the Farms of West-Central and Northern Saskatchewan 1942-43 to 1947*. Unpublished report. Ottawa, Dept. of Agriculture, Economics Div.

⁴ As an example, see the discussion on pp. 16-21. Canada, Dept. of Agriculture. *An Economic Classification of Land in the Elrose-Rosetown-Conquest Area 1944*. Mimeo. report. Ottawa. 1948.

and offset by changes in cultural practices, a more serious threat by water erosion is showing up, especially in parkland areas.

Technical Changes.—Contributing significantly to agricultural capacity in recent years is an increased flexibility to technological developments. Changes in cultural practices, adoption of improved varieties of grain and improved management practices appear to be more widely used. Response of farmers to improved techniques is more general.

The advance of mechanization, of course, has been one of the most significant technological developments. It has exerted a strong pressure on the increase in size of farm and changes in this regard have contributed to rural community, school and other social changes. In recent years, the drive for more mechanization has been more rapid in the northern park and wooded areas than in the prairie areas which had reached a fairly advanced stage by the early forties. Mechanization has carried well down to the smaller farms particularly with respect to power. In methods of harvesting, combining appears to be well on the way to supplanting the binder and thresher even in the parkland areas. With regard to mechanization in livestock production, a serious lag can be identified as compared with the rapid advance in efficiency of crop production.

In plant breeding work many new crop varieties have been coming forward with more specific relation to individual areas.¹ The adoption of such new varieties and a more general use of registered seed is encouraging.

Changes in cultural practices have provided an effective control of wind erosion by use of the one way disc for tillage. In addition, this method has perhaps increased the effectiveness of moisture conservation as compared with earlier methods. Changes in cultural practices and adaptation of newer machines have speeded up operations during the crop season especially at the critical seeding and harvesting periods and have allowed more effective planning of work.

Other Changes Associated with Production.—Probably the most significant changes in recent years are of a social character. With the trend of fewer and larger farms, more particularly in prairie areas, there has been a re-organization of rural schools into larger school units. Higher farm income has increased the desire for improved living conditions. This has resulted in a migration of families from farms to towns or cities and often a change to operation and management from an urban residence. Families can be nearer schools, have the advantages of electricity and water and the social advantages of community life.

Changes in Land Use.—Intensity of land use does not have much significance in Saskatchewan because of the close relationship between soil moisture at seeding time and early summer with the yield in that fall. In prairie areas, only crops which are reasonably resistant to drought can be grown, thus eliminating row crops which can make more intensive use of the land. About the only way intensity of land use is effected is through the proportion of cropland which is seeded on summerfallow or stubble land. Because of the dependence on moisture prospects, therefore, a relatively high degree of flexibility or ability to "roll up" and "unroll" has developed in the use of land. Shifts in summerfallow and stubble acreage not only affect the acreage of wheat but that of coarse grains and also livestock numbers.

In the parkland and grey wooded soil areas where summerfallow has been used as a means of weed control, other means might allow a more intensive use. The use of more forage crops in the rotation instead of summerfallow would not only act as a measure to control weeds but to maintain soil fertility

¹ See discussion on cereal variety zones pp. 36-42. *Guide to Farm Practice in Saskatchewan, 1948.* Prepared jointly by the University of Saskatchewan, Provincial and Dominion Departments of Agriculture. Regina, Dept. of Agriculture. 1948.

and prevent soil erosion. Moreover, the use of chemical weed control would allow an effective control and permit wider use of the land.

All farm business studies made in Saskatchewan have indicated the predominance of wheat in the economy in every section of the province and any differences in the type of farming areas are associated with adjustments within changing price expectations. Because enterprises other than wheat are usually secondary, adjustments are usually made with comparative ease and speed and are a regular feature of farming practice. Farmers have doubled hog production in one move. The same thing has happened with other enterprises but not often with wheat.

Most of the improvements made in recent years with regard to size of farm, cultural practices, mechanization, and improved crop varieties probably have tended to increase the advantage of farms and of farming areas which already had a comparative advantage. Problems of adjustments of the segment of disadvantaged farms are ever among us. The experience of the Prairie Farm Assistance program has pointed very forceably to these farms and farming areas.

An Economic Classification of Land.—The program of an Economic Classification of Land carried out by the Economics Division has proceeded to the stage where about one-half of the occupied farm lands of the province has been classified as to their suitability for wheat production. In 103 municipal units of the Brown Soil Zone, (the entire area) approximately 45 per cent of the land has been rated as submarginal for wheat production. In the Dark Brown Soil Zone, where 29 municipal units have been completed in this program, it is estimated that approximately 30 per cent is in this category.

In an area of forty municipal units comprising over 8.2 million acres in the Southwestern part of this province included in the 1946 and 1947 Economic Surveys conducted by this Division, approximately 46 per cent was indicated as improved land. Within individual municipal units here the percentage of improved land generally ranges from approximately 30 to 60 per cent depending on the quality of soil, topography and climatic conditions.

In this area where the use of improved land is highest for wheat production it is significant that 16 per cent of the improved land is found in Land Class I, graded as submarginal for this use. An additional 28 per cent is located in Land Class II, which is the grade of land on the margin of successful settlement. While recent trends in increased size of farm, increased farm prices, and improved technological and mechanical developments have been conducive to a shift in the margin of settlement into these grades of land, the long time view would indicate an overextension of cropland in the prairies beyond a desirable level for a stable agriculture. In large sections of the prairie area changes in the use of land have fluctuated in Land Class I and II between arable farming and grazing, for most practical purposes the only alternative use.

The economic classification of land which is completed only in prairie areas of the province takes cognizance of the long time experience of farmers on the land and is a guide to those operating the farms and those directing and formulating land policies. In matters of credit, for instance, the economic classification of land forms a core of information to indicate the probability of success. Uses of the classification by agencies such as the Saskatchewan Assessment Commission, the Lands Branch, the Conservation and Development Branch, the Agricultural Representative Service of the Saskatchewan Department of Agriculture and the Veterans' Land Act Administration might be cited as a direct application in guiding farmers in the proper use of land. In formulating policies of land use in this province and in the program phase, the classification forms safe background information upon which to build.

Coming closer to the farmer, the educational benefits and the application by the Agricultural Committees and District Boards in each Agricultural

Representative district in pointing to the land use problems of their area are enough to warrant the classification.

Because of the large percentage of lands graded as submarginal for wheat production (Land Class I) and better suited to grazing, a classification indicating the capability for grazing would conceivably be the next step. Where conditions are favourable, however, for alternative uses, such as forestry, an additional classification would be required based on the suitability of land for this use.

Land Use Adjustment in Saskatchewan.—A final differentiation of land use in Saskatchewan is related to three conditions bearing on land resources. There are (1) the under-use of land resources, (2) the over-use of land resources and (3) the inefficient use of land resources. Under the first heading which refers to resources not fully used, we can point to probably one and one-half or two million acres of agricultural lands which might permit further economic settlement in this province. These lands are found mainly in the northeastern part. Further development of small pastures on prairie farms and bushland on occupied farms in northern areas add slowly to the cropland acreage.

Within the present agricultural area there are also some unoccupied lands which are chiefly unused grazing land. Some estimates have placed the area of such land as high as six million acres. A great deal of the occupied grazing lands are also unused. In a land use study¹ in the Rural Municipalities of Chaplin and Webb in 1945, only 67 per cent of available native pasture was actually utilized.

While the application of known and approved methods to increase productivity has shown some increase, still wider adoption of better crops, grazing and livestock management methods would minimize the under-use aspect of land resources in this province.

The under-use of land resources also results in this province because of neglect in the under-use of water resources for agricultural purposes. This refers to the use of water for irrigation or other uses on a district basis, and to the use on individual farms as well. In Saskatchewan, only about 40,000 acres are irrigated, either by standard irrigation methods or by semi-controlled flooding.² A further 90,000 acres are ready for use. The work of the Prairie Farm Rehabilitation Administration in the development of storage water supplies for better utilization of grazing lands and for farm needs has been significant. Further development in all phases of agriculture by the improvement of water resources can be expected in this province.

Over-use of land resources in Saskatchewan is evident in areas where unwarranted use has been made. There has been inappropriate use by an extension of settlement into areas with submarginal characteristics. This type of misuse is by far the largest resource problem in Saskatchewan. The extension of arable agriculture into areas fit only for grazing or forestry has not only wasted the land resource but also capital and labour and has been detrimental to human resources.

In many cropland areas, over-intensive use of land is showing up through a progressive deterioration of soil structure and fertility. Despite recent improved cultural practices and increase in mechanization, a decline in productivity in the poorer areas will force more abandonment for crop production. Over-grazing of pasture lands also represents a misuse of these lands. Both point to an insufficient consideration of conservation of land resources.

¹ Canada. Dept. of Agriculture. *The Economic Utilization of Grazing Lands in Two Municipal Units Representative of South Central and Southwestern Saskatchewan 1945*. Unpublished material. Saskatoon, Sask., Dominion Economics Division, University of Saskatchewan.

² Gray, E. L. (Superintendent, Water Development, Prairie Farm Rehabilitation). *Irrigation*. An address at the tenth series of Graduate Lectures, Saskatchewan Agricultural College Graduates' Association. January 4, 1949.

Inefficient use of land resources is linked closely with the use of labour and capital. The balance between all these resources involves efficiency of output as compared with input. While probably not as marked as some other agricultural areas of Canada, because of the heavy exodus of people during the war years and in the post-war period, an inefficient use of labour is still caused by an excess of manpower in many cases. The overweighting of the labour component as well as deficiency of capital associated with the land resource means a relatively lower net output per man in terms of net production as compared with industry.

Inefficiency in agriculture has been lessened in Saskatchewan by an increase in farm size. Generally, the improvement has not been applied to the group of farms already of small size.

Inefficient use of land is indicated, in some cases, by the setting up of a farm type not consistent with the physical factors and the quality of the land. The use of heavy clay for grazing purposes is an example of use of land which does not allow maximum output. Failure to keep abreast of modern technological and cultural developments in agriculture also can be included in this category.

Agricultural development in Saskatchewan has reached a stage in which greater emphasis must be placed on conserving and guarding the use of land resources for the future.

THE RELIEF SETTLEMENT SCHEME IN ALBERTA

T. S. RACKHAM

From 1932 until 1941 the Federal and various municipal governments co-operated with the Provincial Government of Alberta in making loans for the settlement, in rural areas, of families dependent on urban relief. The loan was sufficient to provide a suitable applicant with some farm equipment and a subsistence allowance of about \$10 per month per family for three years. The Economics Division of the Dominion Department of Agriculture, at the suggestion of the Alberta Department of Agriculture, made a study to determine the success of this scheme in rehabilitating urban unemployed. The study covered (1) data on file in the Alberta government offices concerning each placement, and (2) records obtained through personal interview by an enumerator in the summer of 1948. The interview included questions on the progress made since settlement by 70 settlers. This group was chosen as a representative sample of those who remained on the land.

Between 1932 and 1941 a total of 1,092 heads of families with 4,056 dependents were assisted by the scheme. Of these, 672 families sooner or later abandoned their farms and equipment. Of the 420 remaining on farms, 264 had made full repayment of their indebtedness to the government, while 57 had made partial repayments, and 99 had made no repayment at all. Altogether these families received \$671,220, of which \$170,060 was repaid, about half through actual repayments and half through salvage of abandoned equipment and livestock. The Dominion Government paid 42 per cent of the net cost of \$501,160, 32 per cent was paid by the Provincial Government, and 26 per cent by the municipal governments concerned. The above amount does not include the cost of administration which was borne mainly by the Provincial Government.

Although abandonments totalled 62 per cent, these, from a relief point of view, should not be considered as wholly unsuccessful. Most of these settlers had been sustained for at least two and sometimes three or more years by combining their own efforts with the assistance provided by the scheme. Considering the whole group of 1,092 families and assuming that they had been maintained entirely by this grant of half a million dollars, there would have been available only \$230 per family per year for two years.

This is only 14 cents per person daily. Such an amount anywhere but on a farm could hardly have sufficed to maintain one person, even at the prices then prevailing.

Further information was secured from the analysis of 1,081 files¹ dealing with individual settlers. For most of them the acquisition of a suitable farm was the first major problem. Methods of acquisition are shown in Table 1. Few were able to secure land of better than mediocre quality, and most of them were located on undeveloped parcels of land in the northern or western bush areas of the province. There were no buildings on 52 per cent of these farms and 60 per cent had no broken land. Of settlers placed on farms with 100 acres or more under cultivation, 69 per cent became established, while only 35 per cent of those placed on farms without broken land succeeded.

The personal factors, however, were far more important in determining the eventual establishment of these settlers. Although personal qualities such as tenacity, thrift, and industry are not measurable in a study of this kind, other characteristics can be appraised.

Table 1.—Method of Land Acquisition of 1,081 Settlers at Time of Placement, Alberta, 1932-1941

Form of Contract	Number	Per Cent
Settled on previously owned land.....	47	4.3
Filed on homesteads.....	431	39.9
Rented land.....	292	27.0
Registered on C.P.R. Brush Contracts.....	144	13.3
Secured Cultivation Leases on Crown Land.....	45	4.2
Contracted purchase agreements.....	122	11.3
Total.....	1,081	100.0

Considering the settlers' experience, it was found that those who were raised on a farm and particularly those who subsequently worked full-time at another trade became established more readily than others who lacked such experience. This tendency was also shown when the settlers were grouped according to their occupations prior to settlement. Most successful were those with related agricultural occupations such as gardeners, dairymen and draymen, while least successful were those from merchandising trades such as grocers and butchers. It was also more helpful to have carpentering rather than mechanical experience, because those who had been builders were more capable of making their homes comfortable.

Older settlers were more inclined to stay on the land than the younger men. In the case of settlers over 50 years of age, 53 per cent became established; of the 463 between 35 and 50 years old, 45 per cent were successful and of the 473 under 35, only 29 per cent became established on farms. In addition, settlers with families, and particularly those with three or more sons, showed a higher proportion of establishments than settlers without children.

The percentage of abandonments was not as high for settlers who were placed in later years. The abandonments decreased progressively from 75 per cent for the 1932 group to 29 per cent for those settled in 1941. Among all abandonments there were many who could have succeeded in establishing themselves on farms but who left farming because they saw greater opportunities in other kinds of employment. About half of the settlers who abandoned in other farms were known to have either enlisted or secured other employment. The remainder left their farms because of incompetence, indifference, or dissatisfaction, or because of more obvious reasons such as death, poor health, domestic trouble and similar misfortunes.

¹ Eleven individual files were not available for detailed analysis at the time of study.

Table 2.—Kinds of Land Contract Held by 70 Settlers, Alberta, 1932-41

Kind of Contract	At the Start		At Time of Survey	
	Number	Per Cent	Number	Per Cent
Owned title.....	9	13	37	53
Homestead.....	9	13		
C.P.R. Brush Contract.....	26	37	16	23
Rental Contract.....	5	7	2	3
Cultivation Lease.....	7	10	6	8
Purchase Agreement.....	14	20	9	13
Total.....	70	100	70	100

The field survey revealed that out of the 70 established settlers interviewed, 53 per cent still operated the original farm obtained under the settlement scheme. Through new breaking, cultivated acreage on these farms had increased from an average of 10 to an average of 50 acres per farm. A further 26 per cent of the settlers had enlarged their original holdings by purchase or rental of additional land. On these farms the cultivated acreage had increased from an average of nine to an average of 88 acres, of which 45 acres were new breaking. The remaining 21 per cent of settlers had moved from their first locations and purchased or rented different farms. These latter farms averaged 117 cultivated acres, of which about 25 acres were new breaking.

Of the whole survey group only 20 per cent had more than 10 acres of cultivated land at the start, but at the time of the survey 20 per cent had more than 100 acres of cultivated land. Total land occupied had increased by 45 per cent. At first 90 per cent of the settlers had quarter-section farms, but at the time of survey there were only 53 per cent with quarter-section farms. There has been a notable increase in land ownership—from 13 per cent at the start to 53 per cent (Table 2).

All farms visited were found to have reasonably suitable buildings, although at first 70 per cent had no buildings at all. The buildings in general were unpainted and of relatively temporary construction. However, there was some evidence of planned improvement and programs for new permanent buildings. Farm machinery was mainly old and obsolete with only 54 per cent of the settlers having some kind of tractor and 44 per cent possessing cars or trucks. A diverse assortment of livestock formed a mainstay of these farms, although large numbers were not present (Table 3). Sizable herds could not be sustained due to lack of natural pastures and feed resources were limited by small crop acreages on the farms.

The financial position of the settlers was at first relatively similar. Apart from differences in real estate values depending on location and tenure, their assets were much the same. Similarly, they were all in debt at least to the

Table 3.—Distribution of Livestock on 70 Farms, Alberta, 1932-41

Kind	At the Start		At Time of Survey	
	No. of Farms with Item	Average No. Present	No. of Farms with Item	Average No. Present
Horses.....	69	2.0	69	4.0
Milk cows.....	66	1.5	65	5.5
Other cattle.....	13	1.5	65	8.0
Hogs.....	6	2.5	47	9.0
Sheep and goats.....			8	25.0
Poultry.....	9	19.0	59	70.0

extent of their settlement loan, although some of them assumed additional liabilities in securing their land. In 1948, however, chattel assets of these settlers varied widely due to the varying degrees of success. Real estate values varied considerably because of new purchases and improvements effected by each settler. Since 60 per cent of the settlers have repaid their obligation to the government, land debt accounted for almost all of the remaining liabilities. Twenty-one per cent had no liabilities and 29 per cent had debts of less than \$500. Thirteen per cent had considerably more debt than they had at the start, the rest having about the same or somewhat lower debt than when they started.

Gains in net worth varied upwards from a low of \$1,200. Twelve per cent of the settlers had gains of less than \$2,000, while 17 per cent had gains of over \$10,000, the remaining 71 per cent falling between these limits. One settler, with a family of boys, who developed a brush clearing and breaking business showed a gain in net worth of \$33,009. It must be remembered that these gains in net worth reflected considerable amounts of value appreciation as well as physical gains.

Table 4.—Average Assets, Liabilities and Net Worth of 70 Settlers, Alberta, 1932-41

Item	At the Start	At Time of Survey
—dollars—		
Assets:		
Real estate.....	929	3,432
Livestock.....	176	1,536
Machinery.....	124	1,506
Other assets.....	234	834
Total.....	1,463	7,308
Liabilities.....	1,229	770
Net Worth.....	234	6,538

Generally speaking, annual cash incomes of the settlers were low during the course of settlement, especially before the war. Many of the settlers worked off the farm either on a part-time or full-time basis to supplement the meagre farm returns. Level of living standards have remained relatively low from the beginning of settlement. Much of this was due to variable income in the past and the necessity of spending a large share of cash income for land improvement. Recently some headway has been made in acquiring the effects that will contribute to more comfortable living.

Questioned as to their opinion of the scheme, 66 per cent of the settlers considered the scheme to be successful as a means of re-establishing the unemployed, but 80 per cent thought the loan should have been larger. Only 17 per cent thought they could have started farming without the assistance given by the loan, although 63 per cent would have tried to make a start. Many considered that their greatest obstacle to progress was lack of capital for bringing land into cultivation. The favourable conditions of the past few years led 83 per cent to believe that they can get along successfully from now on.

Results of the study seem to indicate that the scheme had considerable merit. Although the average loan of \$615 given to each settler may not have been sufficient to enable him to start farming under desirable conditions, nevertheless, in view of the depressed conditions existing at the time, the aid given was considerable. The settlers were given something to do and a chance to establish themselves either on farms or in some alternative employment.

However, the development of a similar project in the future would need to be modified. Family allowances would supplement any necessary subsistence payments. It would seem practical to have public assistance in clearing and breaking sufficient land on each farm to enable the settler to produce some of his needs immediately rather than to extend financial aid too long. It does not appear economical to give each settler power equipment and machinery. A better plan would be to provide for group settlement and encourage more efficient use of equipment on a co-operative basis or arrange for machinery use at custom rates. Altogether the results obtained indicate that, with proper planning and careful supervision, successful development of projects such as the Alberta Relief Settlement Scheme can be accomplished.

REVIEW OF LITERATURE

World Economic Report, 1948.—Lake Success, N.Y., United Nations, Dept. of Economic Affairs. June 1949. (In Canada, The Ryerson Press, Toronto.) pp. XIX + 300.

World Economic Report, 1948 is a survey of the world economic situation in 1948 and indicates major economic problems and prospects at the end of the year. The report reveals that economic conditions improved considerably in many parts of the world from 1947 to 1948 but that economic activity has been showing a tendency to level off and, in a few countries, to decline since the middle of 1948 and the early months of 1949. In addition, the far-reaching post-war dislocations of international trade have remained acute. The urgency of international action to maintain full employment and to promote economic development is accentuated by the tendency of economic activity to level off even though the world's supply of goods is still inadequate to meet the requirements of the growing world population.

This report is also a good source book, containing 193 tables and 16 charts. Part I deals with world developments in industrial and agricultural production, inflationary and deflationary tendencies, and international trade and finance. Part II contains an analysis of outstanding economic development in various regions of the world; Part III provides analysis of selected world problems of current importance; and Part IV contains a brief account of the economic activities of the United Nations and the specialized agencies. In addition, it gives a chronology of the more important international economic events of the period under review (December 1947 to March 1949).

In dealing with inflationary trends and post-war trade the report contains some interesting observations. The latter part of 1948 and the beginning of 1949 appear to represent a turning point in post-war inflationary developments. This period was characterized (a) by the fall in prices, especially of food, in some important countries; (b) by many instances of partial derationing and decontrol as a result of the easing of specific shortages; and (c) by an increase in unemployment in a number of countries.

It might be thought that the devaluation of over-valued currencies so as to close the existing—and, it appears, widening—discrepancy between prices in different countries would constitute the easiest way to solve the present difficulties of international trade and finance. The indications are, however, that this is an over-simplification of the problem. It is undoubtedly true that one could devise a set of international exchange rates that would be compatible with international equilibrium and free convertibility of currencies. But it is also true that the full benefits of multilateral trade depend on the establishment of trading channels which in turn would be contingent upon changes in the nature of production and consumption in all the countries involved. The establishment of equilibrium rates and free convertibility alone, quite apart from the technical difficulty of computing the set of exchange rates involved,

would be likely to have grave repercussions on national employment and prosperity in numerous countries. The problem of combining the maintenance of high levels of employment and national prosperity with international integration and equilibrium is therefore one which can hardly be solved in a short time or by schematic methods.

Report of the Council of FAO.—Sixth Session 13-24, June, 1949, Paris, France. Washington, D.C., Food and Agriculture Organization of the United Nations, 1949. (In Canada, The Ryerson Press, Toronto.) pp. 28.

The subjects discussed at the Council Meeting were: Report of the Director General on his Mission (covering the countries of the Mediterranean basin, the Near East, Asia and the Far East); The World Food Situation; International Distribution; National Plans and Programs; Development Problems, Including Financing and Technical Assistance; FAO's Program of Work; Palestine Arab Refugees; Greek Refugees; Budget and Finance; Arrangement for the Fifth Session of the Conference; Site of Permanent Headquarters; Relations with Other International Organizations; Appointments to Standing Advisory Committees; and Arrangements for the Seventh Session of the Council.

The Fifth Session of the FAO Conference will start Monday, 21 November, 1949, in Washington, D.C.

HARRELL, Thomas W. *Industrial Psychology*. New York, Rinehart & Co., Inc. 1949. pp. XVII + 462.

This book is divided into three parts, entitled *Individual Differences*, *Human Engineering*, and *Human Relations*. It is well illustrated with a large number of tables and charts.

The scope of the book is indicated by the chapter headings, some of which include: *Individual Differences and their Evaluation*; *Selection by Interview and Application Blank*; *Personnel Tests*; *Improving Work Methods*; *Training*; *Accident Prevention*; *Attitudes and Job Satisfaction*; *Morale and Monotony*; *Mental Hygiene and Personnel Counselling*; *Psychological Aspects of Labour Relations*.

Industrial psychology has become important as industry has developed into big factories with large groups of specialized employees.

As the author points out, "The basic assumption of this book is that the chief contribution psychology can make in industry is to analyze the problem of labor-management co-operation and to develop techniques which will facilitate such co-operation".

The author defines industrial psychology as "the study of human activities in industrial civilization. The study is concerned mainly with people at work".

NOTES

Because the United States pig crop in the spring of 1949 was 15 per cent larger than in 1948, hog marketings will be considerably larger this fall than last. Hog prices have been edging downward since reaching the high point of the year in mid-August. The seasonal decline this fall may be larger than usual; may drop prices to support levels.

In the United States, chiefly because of price support buying of cheese and an increase in the support price for butter, prices of dairy products rose in the last month. Seasonal decrease in milk output also strengthened prices. However, wholesale milk prices in mid-August still were 22 per cent below a year earlier; butterfat was off 25 per cent.

With consumer incomes continuing high, consumption of all dairy products except butter is holding up. Consumption of butter continues well below pre-war.

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A REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION, MARKETING SERVICE
DEPARTMENT OF AGRICULTURE, OTTAWA

Published by Authority of the Right Honourable James G. Gardiner, Minister of Agriculture

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ANNUAL AND MONTHLY INDEX NUMBERS
WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year	Wholesale Prices 1935-39=100			Farm Prices of Agricultural Products 1935-39=100	Commodities and Services used by Farmers (a) 1935-39=100		Cost of Living 1935-39=100	
	Farm Products (b)	Field Products (c)	Animal Products (d)		Equip- ment and Materials (f)	Eleven Factor Index (g)	Farm Living Costs (a) (h)	Urban Living Costs (i)
1913.....					85.4	.....	80.1	79.1
1914.....					90.2	85.3	82.3	79.7
1915.....					96.9	91.6	86.5	80.7
1916.....					101.7	100.5	93.7	87.0
1917.....					140.7	140.5	111.5	102.4
1918.....					164.1	160.2	131.1	115.6
1919.....					169.1	167.9	143.0	126.5
1920.....					190.1	186.5	171.3	145.4
1921.....					147.4	152.5	139.9	129.9
1922.....					124.6	134.1	127.9	120.4
1923.....					118.3	130.6	128.3	120.7
1924.....					122.3	131.9	125.5	118.8
1925.....					123.2	131.8	123.9	119.8
1926.....	144.4	158.5	130.2		119.9	130.6	121.1	121.8
1927.....	138.6	149.4	127.8		119.9	131.2	119.8	119.9
1928.....	136.3	134.3	138.2		118.3	129.3	118.5	120.5
1929.....	140.8	137.2	144.4		117.6	127.9	117.3	121.7
1930.....	119.5	105.8	133.3		105.6	117.0	113.7	120.8
1931.....	78.9	65.0	92.7		92.2	100.9	103.9	109.1
1932.....	65.5	60.4	70.5		89.3	93.3	97.8	99.0
1933.....	69.3	69.3	69.2		88.8	89.8	95.8	94.4
1934.....	83.5	80.5	86.5		96.8	95.5	97.9	95.6
1935.....	89.2	84.4	94.1	88.0	95.6	95.4	97.9	96.2
1936.....	97.9	102.2	93.7	96.9	98.7	98.1	98.3	98.1
1937.....	117.4	128.9	106.0	119.7	108.4	105.3	102.9	101.2
1938.....	102.9	100.9	104.8	105.0	101.2	101.7	101.9	102.2
1939.....	92.6	83.7	101.5	91.8	95.7	99.3	99.5	101.5
1940.....	96.1	85.4	106.7	96.8	101.8	106.8	108.5	105.6
1941.....	106.6	88.9	124.4	110.2	107.8	116.1	114.1	111.7
1942.....	127.1	109.7	144.6	133.1	119.2	131.6	119.0	117.0
1943.....	145.4	129.0	161.8	157.8	122.4	143.4	121.7	118.4
1944.....	155.3	144.5	166.1	172.4	126.0	148.0	122.8	118.9
1945.....	165.3	160.4	170.2	184.2	125.9	152.1	123.2	119.5
1946.....	177.0	172.9	181.2	200.8	128.0	157.0	127.1	123.6
1947.....	189.7	179.1	200.2	212.5	139.5	170.4	138.3	135.5
1948.....	229.6	195.6	263.7	252.5	173.1	196.9	162.8	155.0
1948								
Oct.....	232.7	184.4	280.9	260.1	.....	.....	.....	159.6
Nov.....	232.4	186.2	278.6	257.8	.....	.....	.....	159.6
Dec.....	233.6	186.7	280.4	259.7	.....	.....	.....	158.9
1949								
Jan.....	232.2	187.7	276.7	257.5	180.3	198.3	171.8	159.6
Feb.....	226.2	186.1	266.3	253.0	.....	.....	.....	159.5
Mar.....	224.2	183.7	264.7	251.3	.....	.....	.....	159.2
April.....	224.5	184.9	264.1	250.7	180.4	202.9	173.3	159.3
May.....	225.2	186.1	264.3	250.7	.....	.....	.....	159.5
June.....	230.2	190.5	269.9	254.5	.....	.....	.....	160.5
July.....	231.4	193.4	269.3	253.7	.....	.....	.....	162.1
Aug.....	225.9	182.4	269.3	253.2	180.2	204.2	174.5	162.8
Sept.....	222.6	182.0	263.3	249.3	.....	.....	.....	162.3
Oct.....	219.7	181.9	257.6	.....	.....	.....	.....	162.2

(a) Revised July, 1948, by The Dominion Bureau of Statistics.

(b) Canada. Dominion Bureau of Statistics, Prices Branch. *Prices and Price Indexes*. (Mimeo). Ottawa, Monthly. Wholesale prices of products of Canadian farms.

(c) Ibid (b). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid (b). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agricultural Division. *Index Numbers of Farm Prices of Agricultural Products*. (Mimeo). Ottawa, Monthly.(f) Canada. Dominion Bureau of Statistics, Prices Branch. *Price Index Numbers of Commodities and Services Used by Farmers*. (Mimeo). Ottawa, Jan., Apr., and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) *Price Index Numbers of Commodities and Services Used by Farmers*. Includes food, clothing, fuel, household equipment, health, maintenance and miscellaneous.(i) *Prices and Price Indexes*. Includes food, rent, fuel and lighting, clothing, home furnishings and services, miscellaneous and retail prices of commodities.

THE ECONOMIC SITUATION

The highlights in the Canadian economy for the year 1949 include a major re-alignment of currencies, a softening of export demand for some commodities and an increase in imports, a record high domestic investment program, reduced personal income taxes, and the maintenance of a high level of economic activity. It is also the first year in the post-war period in which plant capacity and labour supply appear generally adequate to meet demand.

Contrary to developments in the United States, general activity in the Canadian economy has experienced no downward adjustment in 1949 and has, in fact, remained at a uniformly high level throughout the year. However, the strong inflationary trend of previous years has, to a large extent, subsided. Throughout most of the economy supplies are now adequate to meet existing demand at current prices. Labour is no longer in generally short supply. At the same time near maximum employment of labour and other productive facilities has been maintained.

Gross national product at current prices, reflecting total production of goods and services, is expected to approximate \$16 billion. After allowance is made for higher average prices the physical output of the nation will moderately exceed that of 1948. This record level of production has been achieved even though crop yields have been below average.

On the demand side, requirements of the domestic market have been greater than in the previous year while exports, considered in physical terms, have been somewhat lower.

The 1949 investment program is the highest on record. Non-government expenditures for new construction and for machinery and equipment are expected to approximate \$2.8 billion compared with \$2.54 billion in 1948. After allowance is made for higher prices, the physical volume of investment exceeds that of the previous year by about four per cent. The more pronounced increases in capital expenditure have taken place in utilities, institutions, residential building and agriculture.

Personal consumer spending this year has been stimulated by higher total incomes, lower personal income taxes and re-payment of the refundable wartime income tax by the Federal Government. For the first six months of 1949 wages and salaries, which account for nearly two-thirds of total personal income re-

ceived, exceeded the level of the same months of 1948 by 10 per cent. Non-incorporated business receipts have also been higher, as have various forms of investment income including dividends and rentals. Net farm income for 1949 is below that in 1948, mainly due to a lower physical volume of output. When considered in aggregate terms the percentage increase between 1948 and 1949 in current incomes available for spending (disposable income) on consumer goods has exceeded the rise in living costs (although the index showed a rise in 1949 over 1948). Consequently, there has been a moderate increase in *real* consumer purchasing power. This has been accompanied by a corresponding increase in the physical volume of consumer purchases. The sharpest rise has taken place in the durable goods field, especially automobiles, where unfilled demand continues.

On the other hand, Canadian dollar sales abroad in 1949 are barely holding up to last year's level in value and are noticeably lower in physical volume. Reduced availability of dollars has left the United Kingdom and most other overseas countries with a contracted capacity to buy Canadian goods. At the same time the downward adjustment in the United States' economy that became evident early in the year has resulted in a levelling out of the hitherto rising trend of Canadian sales to that market.

Canadian imports have continued to rise, reflecting strong internal demand, partial relaxation of import restrictions and improved supplies abroad. Thus, the balance in receipts of foreign exchange over expenditures, though remaining positive, will be small compared with 1948.

Canadian price levels this year have been subject to two major counteracting influences. On the one hand, strong domestic demand and rising costs have continued to exert upward pressures. On the other, softening in foreign demand, accompanied by declining prices for various commodities, has exerted a downward pressure in related sectors of the Canadian economy. The domestic wholesale price level, which is strongly influenced by international commodity prices, has remained fairly stable throughout the year though experiencing a slight declining trend. Consumer prices, which reflect to a greater degree domestic market influences, have shown a slightly

rising trend for most of the year. In the last quarter of 1949 revaluation of the Canadian dollar will tend to raise the domestic prices of those commodities which feature in trade with the United States. This factor will serve to restrain the fall in the general price level that could have been expected as a result of devaluation abroad, the improving supply position in Canada, and the downward seasonal movement of agricultural prices.

Decontrol.—The policy of decontrol is continuing. The Dominion Government at the end of March, 1949, authorized the Wartime Prices and Trade Board to withdraw price ceiling orders on flour, bread, butter, sugar and molasses, and on those fruits and vegetables which were not limited in supply by the operation of the import restrictions at that time. Concurrently, the subsidy of 46.5 cents a bushel which had been paid since August 1, 1948 on wheat going into domestic consumption in Canada was withdrawn. On October 17 prices of imported fresh fruits and vegetables were decontrolled. As at December 1, controls still applied only on steel scrap and rents.

Agriculture.—The economic position of Canadian agriculture has improved steadily since 1939. By the end of the war farmers were in a good financial position. Total output in physical terms, cash income and net income, indicate the degree of progress. The gains made during the first half of the forties were maintained and increased in the post-war years. By the end of 1949 there was a slight downward adjustment in income. This, in the main, was due to reduced production because of adverse weather conditions on the prairies.

Farm Prices.—Prices received by farmers from the sale of farm products have increased since 1939. Although agricultural developments in the United States have tended toward lower farm prices, they have exerted less downward pressure in Canada. After allowing for some easing of prices of other farm products it is anticipated that the average for 1949 will not be much below the index of 252.5 for the year 1948.

During 1949 government farm price support operations increased. The Federal program of price support has been a factor of growing importance in the level of farm commodity prices in the last 12 months. This was due in some cases to a large output and in some cases to a decline in external demand or to a com-

bination of both factors. The method of support varied from outright purchases of surplus supplies to fixed minimum prices.

Price support measures applied to the following farm commodities in 1949 include potatoes, apples, dried white beans, honey and dried skim milk out of the 1948 production, and apples, butter, cheese and dried skim milk out of the 1949 production. In addition, the Wheat Board has set minimum initial prices for wheat, oats, barley and flaxseed.

Under the Agricultural Products Co-operative Marketing Act, the Department of Agriculture guaranteed minimum advance prices for forage crop seeds, honey and fox pelts of the 1948 production marketed in 1949 and forage crop seeds of the 1949 production.

Although farm prices received showed some decline during the first seven months of 1949 as compared with the last seven months of 1948, there was some rise in prices paid. By August 1949 the price paid by farmers, as reflected in the index number of prices of goods and services used by farmers, had increased slightly over that of August 1948. The ratio of prices received to prices paid shows that the farmers' price position is becoming less favourable in 1949 than in 1948.

Farm Income.—Cash income from the sale of farm products in 1949, because of reduced output, will likely be slightly below the record high of \$2.5 billion in 1948. During the first half of 1949 cash income from the sale of farm products totalled slightly over one billion dollars, as against slightly less for the same period in 1948. The outstanding contribution to the 1949 gain during the first six months of this year was the \$205 million disbursement made by the Canadian Wheat Board in the form of adjusting payments. Income from the sale of grains rose as the result of increased marketings more than offsetting varying declines in grain prices (except wheat). Livestock prices were generally higher during the first six months. While cattle marketings were relatively unchanged, hog marketings were substantially below the level established during the January to June period of a year earlier.

During the last half of 1949, cash income from the sale of farm products is expected to be below that of a year ago. Smaller grain crops this year as against last, are likely to result in reduced marketings during the last half of the year.

Marketings of cattle are expected to decline while the deliveries of hogs are expected to increase during the July-December period. Prices of these products are not expected to vary much from the levels established in the fall of 1948. In the case of hogs, the current United Kingdom contract price for bacon is the same as in 1948; the maintenance of fall cattle prices at or near last year's level may result from the premium which the United States dollar commands over the Canadian dollar. Of course, much will depend on any subsequent changes of cattle prices south of the border.

Net income of farm operators from farming operations will also show a decline in 1949 as compared with 1948. This decline is due to (a) a small reduction in cash income because of a smaller grain crop and a reduction in the numbers of all types of livestock except hogs, and (b) farm operating expenses and depreciation charges in 1949 will likely be somewhat higher in 1949 than in 1948.

Field Crops Production 1949.—The most recent crop estimates made by the Dominion Bureau of Statistics (November 17) indicate that Canada's 1949 wheat crop is now placed at 367.4 million bushels, some 26 million below the 1948 crop of 393.3 million bushels. Production of coarse grains in 1949 was down markedly from 1948 levels, this year's oat production now being estimated at 316.6 million bushels, barley at 120.4 million and mixed grains at 55.7 million. These represent declines from last year of 42.2, 34.6 and 6.2 million bushels, respectively. The 1949 combined out-turn of spring and fall rye is estimated at 10 million bushels as compared with the 1948 crop of 25 million, while the flaxseed crop of 2.3 million bushels is far below last year's near-record of 17.7 million. The only crops showing increases over the 1948 production are dry beans, soy beans, shelled and fodder corn and sugar beets.

The area sown to fall wheat in Ontario in the autumn of 1949 is estimated at 966,000 acres, an increase of 119,000 or 14 per cent as compared with the area sown in 1948, viz., 847,000 acres.

Fall rye sowings in Canada in 1949 are estimated at 843,000 acres, a decrease of 337,400 acres or 29 per cent as compared with 1,180,400 acres sown in 1948.

Of the land intended for the next year's crop 72 per cent is estimated to have

been worked at October 31 as compared with 68 per cent at the same date last year. By provinces the percentages are as follows, with the 1948 figures within brackets: Prince Edward Island 52 (46); Nova Scotia 67 (56); New Brunswick 63 (57); Quebec 73 (56); Ontario 80 (69); Manitoba 90 (82); Saskatchewan 69 (65); Alberta 65 (72); British Columbia 61 (45).

Production of Oilseed Crops.—The 1949 rapeseed crop of 17,000,000 pounds was far below the 1948 production which was placed at nearly 86,000,000 pounds. On the other hand, Canadian producers of soybeans and sunflower seed increased their 1949 planting and production of both these crops at 2,600,000 bushels and 27,000,000 pounds, respectively, reached the highest levels recorded to date.

Livestock Numbers.—Total estimated numbers of livestock on farms at June 1, 1949, with 1948 estimates in brackets, were as follows: cattle, 9,081,300 (9,475,900); horses, 1,796,200 (1,904,300); sheep, 2,075,400 (2,246,800); hogs, reported in the Bureau's press release of October 9 were estimated at 5,162,900 (4,463,100).

A decrease in cattle occurred in all provinces except Prince Edward Island and Nova Scotia with Saskatchewan showing the greatest percentage decline. Whereas the total decrease in cattle in Canada amounted to about 4.2 per cent, milk cow numbers decreased only 2.2 per cent. There were fewer horses in all provinces than at June 1, 1948 and sheep numbers declined in all provinces except Prince Edward Island.

The estimated number of hogs on farms in Canada at June 1, 1949 was 5,162,900, 16 per cent greater than at June 1, 1948. Increase took place in all provinces except British Columbia. The spring pig crop was 20 per cent larger than in 1948. Breeding intentions reported at the end of May indicate that the higher level of hog production will be maintained with a fall pig crop this year about 17 per cent above that of 1948.

The number of poultry on Canadian farms on June 1 this year was little changed from the same date last year. The June 1 survey by the Dominion Bureau of Statistics placed the total at 72,659,300, up one-tenth of one per cent. Increases in five provinces ranged from 0.4 to 23.4 per cent, while there were decreases in four provinces.

TARIFF REDUCTIONS AND TRADE EXPANSION¹

A. E. RICHARDS²

At Geneva in 1947, from the middle of May to November, negotiations directed towards the reduction of tariffs and other trade barriers were carried out daily by twenty-three countries. These countries composed the Preparatory Committee which was working on a draft Charter for the International Trade Organization. The Preparatory Committee countries which included the United States, the United Kingdom, France, Belgium, Netherlands and Canada, are contributors to over 70 per cent of world trade.

At the end of five months of negotiations the General Agreement on Tariffs and Trade involving over 45,000 items was produced. For each of these 45,000 or more different tariff items, the rate of duty had been lowered or bound by agreement against increase. Under the most-favoured-nation principle all tariff concessions were made general for all Members which accepted the General Agreement. By this means, Canada made direct concessions on approximately 1,000 items and through the multilateral system of negotiations, received directly or indirectly tariff reductions on 44,000 items from other countries.

This multilateral system of tariff and trade negotiations was without precedent. It is in hopeful contrast to the record of failures which characterized the years between the two world wars.

The multilateral system of tariff negotiations has speeded up the work of reducing tariff and other barriers to trade throughout the world. Within the security block where tariff negotiating teams assemble for the job of tariff bargaining all lists of requests for tariff concessions by one country on the others are circulated to all Members. Lists of offers in response to country requests can be examined in the closely guarded files of the Secretariat. In this way stock is taken of indirect concessions which if substantial tend to liberalize the whole series of negotiations.

Tariff Concessions.—All of the tariff reductions contained in the General Agreement are now in full force. The full benefits are not being secured however, due to restrictive measures which some countries have applied for balance of payment reasons. Since the United States is not in balance of payment difficulties imports into the United States cannot be restricted under the General Agreement for this reason. All of the reductions in the United States tariff which were negotiated in the General Agreement of 1947 have been effective since January 1, 1948, to the fullest extent not inconsistent with existing legislation. Canada has benefited by these reductions which have had a stimulating effect on Canadian exports to the United States. It is difficult to estimate how much of the increased movement is due to lower tariffs or to other factors such as removal of export controls or the high level of demand in the United States. The fact is that our merchandise exports to the United States amounted to \$1,501,000,000 in 1948 compared with \$1,034,200,000 in 1947.

The gains for agriculture in the export market were substantial. At Geneva in 1947 the United States reduced its customs tariff on 217 farm products of interest to Canadian agriculture. On 93 items, or nearly half, the duty was reduced by 50 per cent. Some reduction was obtained on 71 items and a binding against increase was negotiated on 53 items.

Some of the United States tariff reductions at Geneva are of special importance to Canadian agriculture. The duty on wheat imported into the United States was reduced from 42 cents a bushel to 21 cents a bushel, barley from 15 cents a bushel to 7½ cents and oats from 8 cents a bushel to 4 cents, alfalfa and clover seed from 4 cents a pound to 2 cents a pound. Skim milk

¹ For an earlier article on ITO see the August issue of *The Economic Annalist*.

² Attended Geneva and Annecy meetings and Havana Conference as adviser on The Canadian delegation.

powder was reduced from 3 cents per pound to $1\frac{1}{2}$ cents. The duty on live poultry was reduced from 4 cents a pound to 2 cents and on shell eggs from 5 cents to $3\frac{1}{2}$ cents per dozen. The tariff quota on heavy live cattle entering the United States was increased from 225,000 per year to 400,000 and the duty on beef and veal entering the United States market was cut from 6 cents a pound to 3 cents a pound. This concession is of major importance to beef producers and the meat packing industry in Canada. Since August 16, 1948, when export controls on beef were lifted to October, 1949, a total of approximately 130 million pounds of beef valued at \$40 million have been exported to the United States from Canada. The duty on apples was cut from 15 cents a bushel to $12\frac{1}{2}$ cents a bushel. The tariff quota for certified seed potatoes was increased from $1\frac{1}{2}$ million bushels annually to $2\frac{1}{2}$ million bushels.

Exports from Canada to the United States of all these products have increased considerably since January 1, 1948, when the reduced duties became effective. This has been a great help in coping with our balance of payments in relation to the United States.

Concessions in tariff rates obtained from the other 22 countries at Geneva are not as far reaching but in total they are substantial and all contribute to the expansion of our overseas markets from a long range point of view. These are some of the positive results which have been accomplished by governments to remove tariff barriers and expand trade.

At Annecy, France, the Contracting Parties to GATT met from April to mid-August in 1949. At this meeting eleven new countries which included Italy, Denmark, and Sweden sought admission to the Agreement through tariff negotiations. All but one country, Colombia, qualified for admission to The General Agreement through a substantial reduction in their tariffs and at the same time received commensurate concessions in return from the original 23 parties to the Agreement.

The tariff concessions received at Annecy are not so impressive as the Geneva results but in total the gains for agriculture are substantial. They will probably become effective between January 1, 1950 and May 30, 1950. Some of the concessions of interest to Canadian agriculture are listed below.

Italy—Free entry on purebred cattle, a reduction from 35% duty on hybrid seed corn to free entry on a tariff quota of 200,000 bushels. Free entry on certified seed potatoes, a reduction in the tariff on wheat from 50 per cent to 30 per cent and a limitation on the domestic selling price. Tariff concessions were obtained also on fresh and dried apples, powdered milk, seed barley, seed oats, malt, canned meats and vegetables, rolled oats, oatmeal and rapeseed.

Denmark—Free entry on wheat with elimination of monopoly charges and mixing regulations. Free entry on clover and all other forage crop seeds, tariff concessions on tomato puree, fresh and canned apples and pears.

Sweden—Free entry for alfalfa seed. Concessions on fresh apples and pears and apple juice. Free entry of dried apples.

Finland—Free entry on red and alsike clover seed. Concessions on fresh and dried apples, apple juice, canned fruits and vegetables.

Greece—Concessions on hams, canned meats, concentrated milk, powdered milk, wheat and wheat flour, apples and seed grains.

Haiti—Free entry of certified seed potatoes. Concessions on evaporated and sweetened condensed milk, oaten cereal foods, canned meats, canned fruits and bacon.

Nicaragua—Concessions on evaporated milk and sweetened condensed milk, milk powder, oaten cereal foods, malt and wheat flour.

Uruguay—Free entry of certified seed potatoes. Concessions on apples, clover and forage crop seeds and purebred live stock.

Dominican Republic—Free entry of seed potatoes, wheat and live stock. Concessions on apples, fresh and canned, and cereal foods.

Liberia—Free entry on live animals. Concessions on bacon, dried and frozen eggs, evaporated milk and milk powder, cheese and wheat flour.

The twenty-three countries which compose the Contracting Parties to the General Agreement did not carry out tariff negotiations among one another at Annecy, but by the application of the most-favoured-nation principle the following indirect concessions are obtained:

Czechoslovakia—Concessions on barley, oats, apples, clover seed, grass seed, dried milk.

France—Concessions on horsemeat, seed barley and oats, leaf tobacco, honey and meat extract.

Norway—Concessions on leaf tobacco and canned meat soups. Continued free entry for wheat with a limitation on the amount of production subsidies paid to producers.

United States—Concessions on butter, vinegar, orchard grass and canned tomatoes.

While tariff negotiations were in progress representatives of the 23 countries which compose the Contracting Parties met daily to consider problems which had arisen between members. Items on the agenda ranged all the way from a complaint by France that Brazil was taxing imported wines unfairly to notice by the Union of South Africa of her intention to intensify import restrictions. Through the General Agreement our export trade is not only protected against tariff increases but in the field of commercial policy our exports are protected against impairment of tariff concessions. Such impairment can result from the imposition of unwarranted quantitative restrictions on imports, mixing regulations, special taxes on imports which are not applied on domestic products, export subsidization and discriminatory trade practices.

At the end of the session of the Contracting Parties in August most of the difficulties confronting the Contracting Parties had been resolved or good headway had been made towards their solution. All of these meetings were conducted within a security block which excluded the press and the public. This international forum on trade relations which permits frank and open discussion has replaced the old method of trying to settle differences through the formality of diplomatic exchanges.

Another round of tariff negotiations is scheduled to start in September of next year. This will involve the 33 countries which now make up the Contracting Parties to the General Agreement and a number of new countries which are expected to seek admission to the benefits of the GATT. This is another constructive step although currency difficulties are now standing in the way of full implementation of the Agreement. The work at Geneva, Havana and Annecy is intended to help clear away some of the fundamental causes for the unbalance in world trade which in time will lead to a freer exchange of goods among nations, raise living standards and provide the economic basis for a more peaceful future.

Canadian labour income in the month of August 1949 is estimated to be \$658 million. This total is \$9 million higher than July 1949 and \$44 million or seven per cent higher than the August 1948 estimate.

Considerably higher employment, together with a moderate increase in wage rates, was responsible for higher labour income in agriculture. Manufacturing, after showing a decline for July, increased \$4 million in August. Seasonal increases in the manufacture of edible plant products occur at this time of the year. Construction activity continued high, and this was reflected in increased income payments in this field. The index of employment in nine leading non-agricultural industries increased from 131.3 on August 1 to 132.1 on September 1, while average weekly earnings for the same industries increased from \$42.98 to \$43.20 over the same period.

According to preliminary figures issued by the Department of Labour, the number of man-days lost through strikes and lockouts was 35,451 in August as compared to 57,744 in July.

TRANSPORTATION AND AGRICULTURE, 1949¹

E. P. REID

The Canadian railway and transportation problem is to the fore again, with declining post-war traffic and rising operating expenses. The matter has been referred for advice to the third Royal Commission of modern times.² The agricultural interest in this possible crisis is diffused in the general interest. The farm community is very much interested in the continued efficiency of the freight-carrying plant—rail, road, and water—in Canada, and between Canada and other parts of the world, because carriage of farm products and farm supplies makes up about a quarter of the freight traffic originated on Canadian railways.

There are a number of possible bases for measuring rail traffic and proportions accounted for by various classes of traffic: (1) tonnage originated; (2) tonnage terminated; (3) either one of the foregoing excluding or including traffic received from and delivered to other carriers outside Canada; (4) ton-miles; (5) gross revenue produced; and (6) net revenue produced. There are regularly published statistics on the basis included in the first three items, but figures for the last-named three categories, classified by commodities or even commodity groups, are not regularly provided. The agency publishing this information for Canadian railways is the Dominion Bureau of Statistics. Similar service in the United States is provided by the Interstate Commerce Commission, which has established a traffic report series showing gross railway freight revenue classified by commodities.

Canadian railway traffic is reported by commodities (76 categories, of which 30 are agricultural and animal products) on a monthly³ and annual⁴ basis, in terms of tons of shipping weight, which usually includes weight of package. Certain detail for each province is shown in each of these series. The annual report is available about the middle of the following year. The monthly series appears three or four months after the close of the period. A more timely but less detailed series is the weekly Car Loadings, published about a week after the close of the period. It has the traffic grouped into only 31 categories, of which 11 are farm products and closely allied commodities. The unit is the carload, large or small, and the territorial detail stops at a division of Canada into eastern and western. The latter report carries the last week and the corresponding week last year, and is considered a rather sensitive indicator of business activity in agricultural marketing and otherwise.

Other regular statistical series from the Dominion Bureau of Statistics cover canal traffic and air traffic, each monthly and annually. There are also reports on receipts and disbursements in railway operation, and an annual summary of the tonnage of various commodities carried by each of the approximately 30 railways in Canada. In the case of some of the local carriers, this last series facilitates regional studies.

Agricultural Railway Freight Traffic.—An examination of the annual summaries of railway freight traffic for a number of recent years, pre-war, wartime, and post-war, shows some characteristics of the agricultural and animal products portion which can be mentioned (basis of tonnage loaded at stations in Canada). The proportion of the whole traffic which these two groups

¹ For a previous article by the same author see "Transportation and Agriculture" in *The Economic Annalist*, Aug. 1946, pp. 57-62.

² Reports of the earlier commission are as follows: *Report of the Royal Commission to Inquire into Railways and Transportation in Canada, 1917* (Drayton-Acworth Report); *Report of the Royal Commission to Inquire into Railways and Transportation in Canada, 1931-32* (Duff Report).

³ Canada. Dept. of Trade and Commerce, Dominion Bureau of Statistics. *Monthly Traffic Report of Railways of Canada*.

⁴ Canada. Dept. of Trade and Commerce, Dominion Bureau of Statistics. *Summary of Monthly Railway Traffic Reports*.

combine to make has varied between one-fifth (1948) and one-third (1944 and 1945). Loadings of wheat have constituted between 44 per cent (1948) and 63 per cent (1941) of the agricultural and animal group. Wheat tonnage is one of the more variable quantities in the list, and the variations from year to year in the aggregate farm products group agree fairly closely with the variations for wheat. The preponderance of wheat tonnage was greater in most war years than before or since.

The annual traffic report for each province indicates the net export or net import status of the province for each of the 76 categories of railway freight traffic. This figure is the difference between tonnage loaded at stations in the province and that unloaded in the province. No precise information as to routes of traffic is provided by the annual or monthly Railway Traffic Reports.

The Markets Information Section of the Department of Agriculture fills out the information on interprovincial movement of some farm products, particularly fruits and vegetables. Expressed in terms of carlot arrivals, the various commodities are reported weekly by province of origin at each of the 12 principal wholesale distributing cities across Canada. The annual reports on apple and potato marketing provide an organized interprovincial record of carlot movements—all shipments from each principal producing province to each province of destination. The same reports cover rail shipments from and to other countries. Another equally as informative report is provided on an annual basis for livestock—"Arrivals of Cattle (Calves, Hogs, Sheep and Lambs) at Stock Yards and Packing Plants according to Province of Origin".¹

Highway movement, which for many commodities and areas has largely supplanted rail transport, has not, to any great extent, been organized statistically by any agency. Many of the marketing surveys conducted by the Economics Division, Dominion Department of Agriculture, have included careful appraisals of the shipment by truck of certain products into market centres or from areas of origin to various destinations.² In each case such information has been only for the survey year or other period, and no agency is regularly issuing such information.

¹ A tabulation appearing in each *Annual (Livestock) Market Review*. Ottawa, Dept. of Agriculture, Marketing Service.

² *Wholesale Marketing of Fresh Fruits and Vegetables in the City of Toronto*. Ottawa, Dept. of Agriculture. Pub. 673, tech. bul. 23. 1940.

The Marketing of Perishable Farm Products in Ottawa. Reid, E. P., Campbell and Hopper. Ottawa, Dept. of Agriculture. Pub. 677, tech. bul. 24. 1940.

The Marketing of Fresh Fruits and Vegetables in the City of Montreal, 1937. Campbell, B. A., Gosselin, Doyle and Delorme. Mimeo. Ottawa, Dept. of Agriculture. 1940.

The Marketing of Fresh Fruits and Vegetables in the Cities of Sherbrooke and Three Rivers. Campbell, B. A., and Fortin, Doyle and Delorme. Mimeo. Ottawa, Dept. of Agriculture, 1941.

The Market for Farm Products in the Sydney Area of Nova Scotia. Reid, E. P. and Hopper, W. C. Mimeo. Ottawa, Dept. of Agriculture. 1941.

The Marketing of Fresh Fruits and Vegetables in Quebec City. Campbell, B. A. and Fortin, Doyle and Delorme. Mimeo. Ottawa, Dept. of Agriculture. 1942.

The Marketing of Grain Corn in Southwestern Ontario. Turner, A. H. Mimeo. Ottawa, Dept. of Agriculture. 1943.

The Market for Farm Products in Urban Centres in Northern Ontario. Peters, W. R. and Reid, E. P. Mimeo. Ottawa, Dept. of Agriculture. 1945.

The Market for Farm Products in the Town of Smiths Falls. Thair, P. J. Mimeo. Ottawa, Dept. of Agriculture. 1946.

The Marketing of Fresh Fruits and Vegetables in Greater Winnipeg. Elliot, R. S., Campbell and Thair. Winnipeg, Manitoba Dept. of Agriculture. 1946.

A Survey of the Production and Marketing of Potatoes in Saskatchewan. Mimeo. Regina, Saskatchewan Dept. of Agriculture. 1947.

The Market for Farm Products in Northwestern Quebec. Reid, E. P. and Dubord, Henri. Mimeo. Ottawa, Dept. of Agriculture. 1947.

Rates.—Effective April 8, 1948, the Board of Transport Commissioners authorized a general increase of 21 per cent in railway freight rates in Canada. Exceptions for agricultural products concerned only certain international, "overhead",¹ and export traffic for which increases had become effective earlier. This decision followed hearings held since late 1946, when the railways had applied for a 30 per cent increase. An application for a further 20 per cent increase had been argued before the Board, whose decision is now pending.

Many commodity rates have, for competitive and other reasons, been reduced below the "basic" level, and it was the latter which could be increased 21 per cent under the Board order. Thus, where carriers have raised certain commodity rates to or toward the basic level and have appended a further 21 per cent increase, substantial total increases have been made between the period previous to April 8, 1948 and September 1949. Rates on grain from the Lakehead to points in southern Ontario and in Quebec as far east as Montreal, are an example. The rate for at least 20 years before 1948 was 25 cents. It is now 38 cents, an increase of 52 per cent. Under the feed grain freight subvention policy the Dominion Treasury is paying the freight on a considerable amount of the traffic under this item, grain, but the policy is operative only from year to year.

Rate information is contained in railway tariffs which are published and which, by law, may be consulted by anyone. However, tariffs are a bulky and intricate record, and are subject to change from time to time, despite the fact that the *general* level of freight rates in Canada was substantially unaltered for 25 years previous to April 1948. The railways and the Board of Transport Commissioners will provide specific rates on request, but considerable probing is necessary in many cases, for example, for a rate now superseded but which applied at some time in the past.

The Agricultural Division of the Dominion Bureau of Statistics has for some years published a number of more significant rates applying to livestock and grain traffic in its annual summaries of statistics of these two commodity groups.

The Royal Commission.—The Commission was appointed December 29, 1948,² and it held sittings throughout Canada from May to August 1949. Its terms of reference are very wide in the transportation field. It is proscribed from performing "functions which, under the Railway Act, are within the exclusive jurisdiction of the Board of Transport Commissioners". However, since Royal Commissions mainly investigate problems and report on their findings with recommendations, it is no basic handicap not to be permitted to regulate rates. The Royal Commission is specifically empowered to "review the Railway Act with respect to such matters as guidance to the Board in general freight rate revisions, competitive rates, international rates, etc., and recommend such amendments therein as may appear to them to be advisable", and, indeed, to "report upon any feature of the Railway Act, (or railway legislation generally) that might advantageously be revised or amended in view of present-day conditions".

A main specific term of reference of interest to agriculture is that concerning sectional interests:

Review and report upon the effect, if any, of economic, geographic or other disadvantages under which certain sections of Canada find themselves in relation to the various transportation services therein, and recommend what measures should be initiated in order that the national transportation policy may best serve the general economic well-being of all Canada.

¹ Originating and terminating in the United States but passing over a Canadian carrier en route.

² P.C. 6033, Dec. 29, 1948.

AGRICULTURAL PRODUCTS MARKETING ACT, 1949

A. H. TURNER

Since the 1920's in Canada, and more specifically since the passage of the Produce Marketing Act in British Columbia in 1927, there has been much interest, among agriculturists and others, in market control and regulation measures for agricultural products, which extend somewhat beyond that of voluntary co-operative marketing in their impact. Most of these market control measures, before becoming effective, require acceptance of the principle of control on a voluntary basis by a majority or greater stated percentage of the producers affected. Once the required number of producers in the area approve the plan for the type of product to be controlled, the remaining producers are compelled to follow the marketing control measures if they wish to market their product.

It is not the intention of this article to discuss at length the history of such marketing legislation. Since 1927 much experience in market control measures for agricultural products has been obtained and a great deal of information has been provided concerning the constitutional rights of the provinces and the Government of Canada with respect to their legislative authority relating to the marketing of agricultural products.

Today, nine of the ten provinces have some system of fluid milk marketing control and also have legislation which provides authority for the establishment of marketing boards or schemes to regulate and control the marketing of agricultural products produced and marketed within the provinces. Producers in British Columbia, Ontario and Nova Scotia have been somewhat more active than in other provinces in the establishment of schemes under this provincial marketing legislation. Unlike British Columbia, Ontario marketing boards, for the most part, act merely as the medium for negotiation with respect to marketing practices and policies and to enforce agreements after such agreements have been approved under the authority of the Ontario Farm Products Control Act. Ownership and control of the actual commodity is not taken by most of the Ontario boards at any time, as is the case in British Columbia and Nova Scotia.

On a national basis, the Natural Products Marketing Act was declared *ultra vires* in 1937. During the war, various wartime boards and other aids given by the Government to agriculture assisted producers in the production and marketing of their products to allow for maximum use in a period when there were short supplies of most products. Some of the wartime export boards, dealing with products under contract with the United Kingdom, continued on a basis similar to that used during wartime with the main purpose of handling and ensuring fulfilment of the export contracts. In addition, the Government of Canada at the spring session in 1949 passed the Agricultural Products Marketing Act.

Purpose of the Act.—The purpose of the Act, as stated in the preamble, indicates that it is desirable to improve the methods and practices of marketing agricultural products of Canada and to co-operate with the provinces which have enacted provincial legislation respecting the marketing of agricultural products locally within the province, in order that such provincial marketing legislation may be extended to the marketing of agricultural products in interprovincial and export trade.

Section 2 of the Act reads as follows:

- (1) The Governor in Council may by order grant authority to any board or agency authorized under the law of any province to exercise powers of regulation in relation to the marketing of any agricultural product locally within the province, to regulate the marketing of such agricultural product outside the province in interprovincial and export trade and for such purposes to

exercise all or any powers like the powers exercisable by such boards or agencies in relation to the marketing of such agricultural product locally within the province.

- (2) The Governor in Council may by order revoke any authority granted under subsection one.

In this way, it will be possible, through marketing boards, to provide producer groups with wide marketing control over any commodity produced in that province. This, of course, assumes that such producer groups desire this control and can have their scheme approved by their own province. The Agricultural Products Marketing Act, 1949, does not give the provincial or local marketing board any greater control over agencies outside the province than is possible through the control of the commodity by the board and whatever contractual arrangements it may make with such agencies outside the province. However, it does give the local board authority to take action with respect to those producing the product within the province and require them to handle the product in a certain manner when marketing outside the province.

Procedure.—Those who have applied for an extension of powers under the Agricultural Products Marketing Act, 1949, have had the following procedure suggested.

An application for powers under the Agricultural Products Marketing Act should, according to the terms of the Act, be submitted to the Dominion Department of Agriculture by the Board established under provincial legislation. Each application should be accompanied by a copy of the Provincial Marketing Act or Acts and amendments thereto as well as by all orders and regulations made thereunder. All such documents should be certified by the Minister who administers the Provincial Act.

The application should designate, by section and paragraph, the powers vested in the Board by provincial legislation which it is desired to have extended under authority of the Dominion Agricultural Products Marketing Act. The actual powers being requested should be set out individually in language consistent with the terms of the Dominion and Provincial legislation.

Before recommendation is made to the Governor in Council that an application for powers under the Agricultural Products Marketing Act be granted, the Department of Agriculture will want to know what may be expected to result from the granting of such powers. It is therefore essential that a full explanation be given as to the proposed application of each of the powers being sought.

Applications will be considered by this Department only after they have been examined and approved by the appropriate provincial marketing authority. It is requested, therefore, that all applications be cleared with respect to provincial authority and that they then be forwarded in triplicate to the Dominion Department of Agriculture at Ottawa for consideration.

Applications Considered.—To date the Governor in Council has extended certain specific powers bestowed upon three provincial boards by their respective provincial legislatures, namely:

1. The British Columbia Fruit Board.
2. The Nova Scotia Marketing Board (with respect to apples).
3. The British Columbia Coast Vegetable Marketing Board.

Consideration is also being given to applications from the Ontario Pear, Plum and Cherry Growers Marketing Board and the British Columbia Interior Vegetable Marketing Board.

For example, the seven specific powers of the British Columbia Coast Vegetable Marketing Board, which were bestowed upon it by the British Columbia government for marketing in a certain area within the province and have been extended under the Agricultural Products Marketing Act, 1949, are as follows:

1. To regulate the time and place at which and to designate the agency through which any regulated product shall be packed, stored, or marketed; to determine the manner of distribution, the quantity and quality, grade or class of the regulated product that shall be transported, packed, stored or marketed by any person at any time; and to prohibit the transportation, packing, storage, or marketing, in whole or in part, of any grade, quality, or class of any regulated product.
2. To require any or all persons engaged in the production, packing, transportation, storing, or marketing of the regulated product to register with and obtain licences from the Board.
3. To cancel any licence for violation of any provision of the scheme or of any order of the Board or the regulations.
4. To fix the price or prices, maximum price or prices, minimum price or prices, or both maximum and minimum prices at which the regulated product, or any grade or class thereof, may be bought or sold in the Province, and may fix different prices for different parts of the Province.
5. To require the person in charge of any vehicle in which the regulated product could be transported to permit any member or employee of the Board or any police constable to search the vehicle.
6. To seize and dispose of any of the regulated product kept, transported, packed, stored, or marketed in violation of any order of the Board.
7. For the purpose of ascertaining whether the orders, rules and regulations of the Board are being complied with to inspect the books, accounts, records and documents of a grower or any person transporting, packing, storing or marketing a regulated product; and to require any such grower or person to produce such books, accounts, records and documents for inspection and give such assistance or information as may be required.

Summary.—While the legislation is new, the general idea as noted above is anything but new. By providing this legislation, the Government of Canada has made it possible for producers to organize themselves into large scale selling and market control units, providing sufficient numbers agree voluntarily that this is the best scheme of marketing their product and that they meet the various other requirements laid down by provincial legislatures.

MARKETING ONTARIO GRAIN CORN¹

M. RACHLIS

In the spring of 1947, the Economics Division of the Department of Agriculture undertook a study whose object was to determine the institutional pattern of marketing corn and to investigate some aspects of the supply, demand and distribution of Canadian corn. This project was requested by growers' representatives and the Agricultural Prices Support Board.

Sources of Data.—The undertaking was carried out during the summer of 1947 and was based on three sources of data. First, a questionnaire survey was made of approximately 130 farms to obtain information from producers. Second, a series of interviews was held with grain dealers, brokers, importers, civil servants and manufacturers of corn products. Third, statistics were tabulated regarding production, foreign trade, transportation and inspections of corn.

Commercial Growing Area.—The commercial grain corn growing area in Canada is concentrated in the southwestern corner of the province of Ontario, particularly in the counties of Essex and Kent and the adjoining areas of Lambton, Middlesex and Elgin. In this area is grown almost all the Canadian corn that enters commercial channels.

Supply.—Between 1935 and 1939, Canada consumed an average of 18.5 million bushels of corn per year. Of this, only about 40 to 50 per cent was domestically grown. The remainder was imported mainly from the United

¹ For an earlier study see A. H. Turner, *The Marketing of Grain Corn in Southwestern Ontario*. Mimeo. report. Ottawa, Department of Agriculture. December, 1943.

States, Argentina and the Union of South Africa. Argentine and South African supplies were cut off from Canada during World War II. Since then, South Africa has had no surplus to export. Over most of the period for which data are available, the United States has been the principal source of Canadian corn imports.

Utilization.—About half the corn consumed in Canada was used for feed and half was used industrially. The principal products manufactured from corn were starch, glucose, corn flour, alcohol and breakfast foods. The major industrial user of corn was the starch industry. All industrial consumers used imported corn, but to a varying degree. When interviewed in 1947, some processors stated that a continuous supply of corn was an important consideration in their operations. They advanced this as their reason for the use of some imported grain.

Quality.—An examination of the records of corn inspections, 1941 to 1946, revealed that Canadian corn, though ordinarily of good quality, was high in moisture content. The moisture content of corn does not enter into the determination of Canadian grades. However, if United States' grading standards had been used, 69 per cent of all Canadian corn inspected between 1941 and 1946 would have been placed below United States grade Number 3.

The marketing season ordinarily begins in October soon after the corn is harvested. As the season progressed, the moisture content of inspected Canadian corn declined (Table 1).

Table 1.—Average Moisture Content of Inspected Canadian Corn by Months, 1941-46*

—	Less than 17·6 Per Cent	17·6—25·0 Per Cent	More than 25·0 Per Cent	Per Cent of Total Annual In- spections
October.....	14·1	28·0	47·9	5·7
November.....	12·9	45·4	41·7	18·6
December.....	13·9	51·7	34·4	17·8
January.....	15·1	62·4	22·5	11·9
February.....	11·8	84·9	3·3	13·0
March.....	12·7	86·6	0·7	10·0
April.....	70·2	29·7	0·1	8·4
May.....	83·8	16·1	0·1	7·6
June.....	92·1	7·9	.....	4·1
July.....	99·5	.....	0·5	2·0
August.....	100·0	.....	.....	0·6
September.....	97·4	.....	2·6	0·3
Average 1941-46.....	30·9	49·8	19·3	100·0

*Dept. of Trade and Commerce, Dominion Bureau of Statistics. Grain Trade of Canada. Ottawa. Annually.

Seventy-seven per cent of the corn was inspected between October and March. During this time, more than 85 per cent of the corn contained in excess of 17·5 per cent of moisture.

Storage.—The investigation of farm corn storage facilities indicated that one reason for the sale of high moisture corn might be the inadequacy of crib capacity to handle the crop. Permanent and temporary crib capacity in Essex-Kent was sufficient to store only 85 per cent of the crop harvested in 1946. In 1947, about half the farm crib capacity in the two counties was more than 15 years old.

Buyers.—The Canadian producer sold most of his market corn to local elevators and dealers. Elevators accounted for 70 per cent of all purchases from growers in the 1946 crop year. The chief functions performed by local buyers were those of assembly and storage. The accurate reporting of price was difficult because local dealers had not adopted a common method of buying corn. As a result, 48 per cent of the growers reported dealers as their principal source of market information.

Growers' Attitudes to Grading.—During wartime price ceilings were imposed on corn. The ceiling prices established differentials for variations in moisture content. Growers were interviewed regarding their attitude toward selling on a moisture content basis. Eighty-six per cent favoured such a system; only 47 per cent favoured compulsory grading of corn.

Domestic Market.—A study of the wholesale market for corn showed that the majority of the industrial consumers was concentrated in Ontario. Details of rail and water movements of corn established that about three-quarters of all movements took place within the province. This indicated that a large part of the feed corn trade was also concentrated in Ontario. Quebec was the only other province that used large quantities of corn.

Channels of Trade.—The ordinary channels of trade consisted of brokers, grain dealers and elevators. A recent tendency to bypass these agencies was found. This trend was shown by the establishment in the production area of buying agencies by the starch and cereal industries. This is an important trend because these two industries utilized almost one-third of the Canadian corn crop.

Price Relationships.—A brief analysis showed that the farm price of Canadian corn was closely associated with the prices of United States' corn at Chicago, and Argentine corn at Liverpool. No relationship was found between the farm price of corn in Canada and the domestic production.

Seasonal Variation in Price.—The index of seasonal variation in the Canadian farm price of corn, 1935-39, was at its peak between July and September, preceding the new harvest, and at its lowest point in October and November, when the bulk of marketed corn was high in moisture. More than 40 per cent of the corn marketed in October and November contained more than 25 per cent moisture. Since about 24 per cent of all the corn that was sold was marketed at these low prices, this represents a considerable loss to Canadian producers. Only about 3 per cent of the selling was done between July and September, when the price was relatively high and practically all of the corn contained less than 17.5 per cent of moisture.

In the six months, January to June, between these two periods of extreme price variation, the index changed only 11 points. In this period of relatively stable prices, farmers marketed about 55 per cent of all corn sold.

TRENDS IN THE SEASONAL VARIATION OF CATTLE AND DRESSED BEEF PRICES¹

A study was made of the seasonal variation of cattle and dressed beef prices in which indexes were prepared showing the average month to month changes that occurred during the twenty-year period 1921 to 1940. These indexes reveal that prices for good steers up to 1,050 pounds on the Toronto market rose sharply from March to June when the average price was almost ten per cent above the annual average. From this peak, prices dropped sharply until November when the average price was ten per cent below the annual average. Retail prices of sirloin steak at Toronto rose very gradually from March to August when the average price was five per cent above the annual average. Prices then dropped until December when the average price was only five per cent below the annual average. Indexes of seasonal variation, such as these, are often used to indicate the probable month-to-month price movement which may occur in the future. In order that these may be used more effectively, it is necessary to be aware of certain limitations.

¹ For an earlier article by the same author see "Seasonal Variation of Prices of Dressed Beef & Cattle". *The Economic Annalist*, Feb., 1949, p. 9.

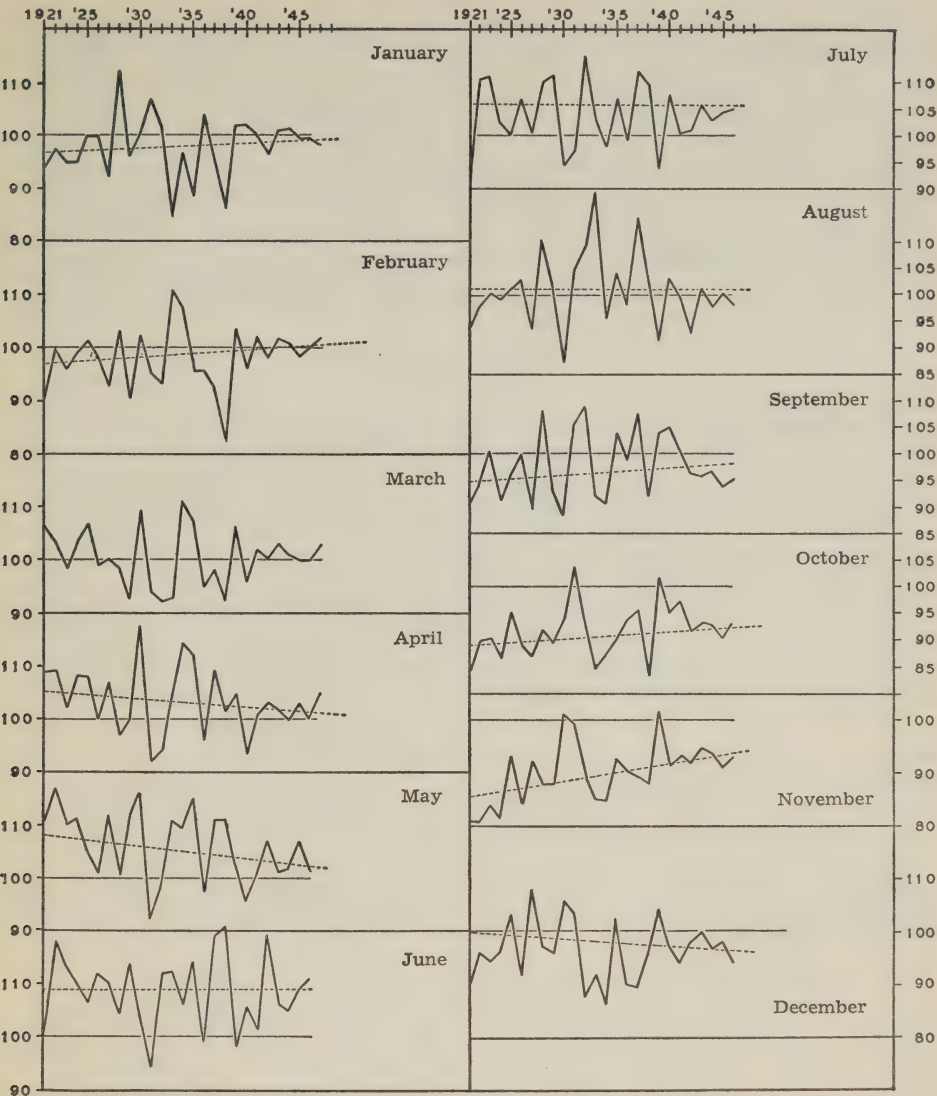


Chart No. 1—Monthly indexes of wholesale prices of steers at Toronto

Month-to-month variations in prices change from year to year. These changes may be gradual and persistent or sudden and more or less erratic, or they may be a combination. An index of the average seasonal variation over a period of twenty years obscures these year to year changes. In Chart No. 1 the monthly indexes of cattle prices for each year have been plotted. The variations from year to year in the monthly values, as well as certain definite trends, are seen clearly in the chart. These characteristics are lost in a twenty-year average index in which one price ratio is selected to represent the whole range of price ratio.

Over the twenty-year period 1921 to 1940, downward trends in Toronto live cattle prices are evident for the months of December, April and May, while

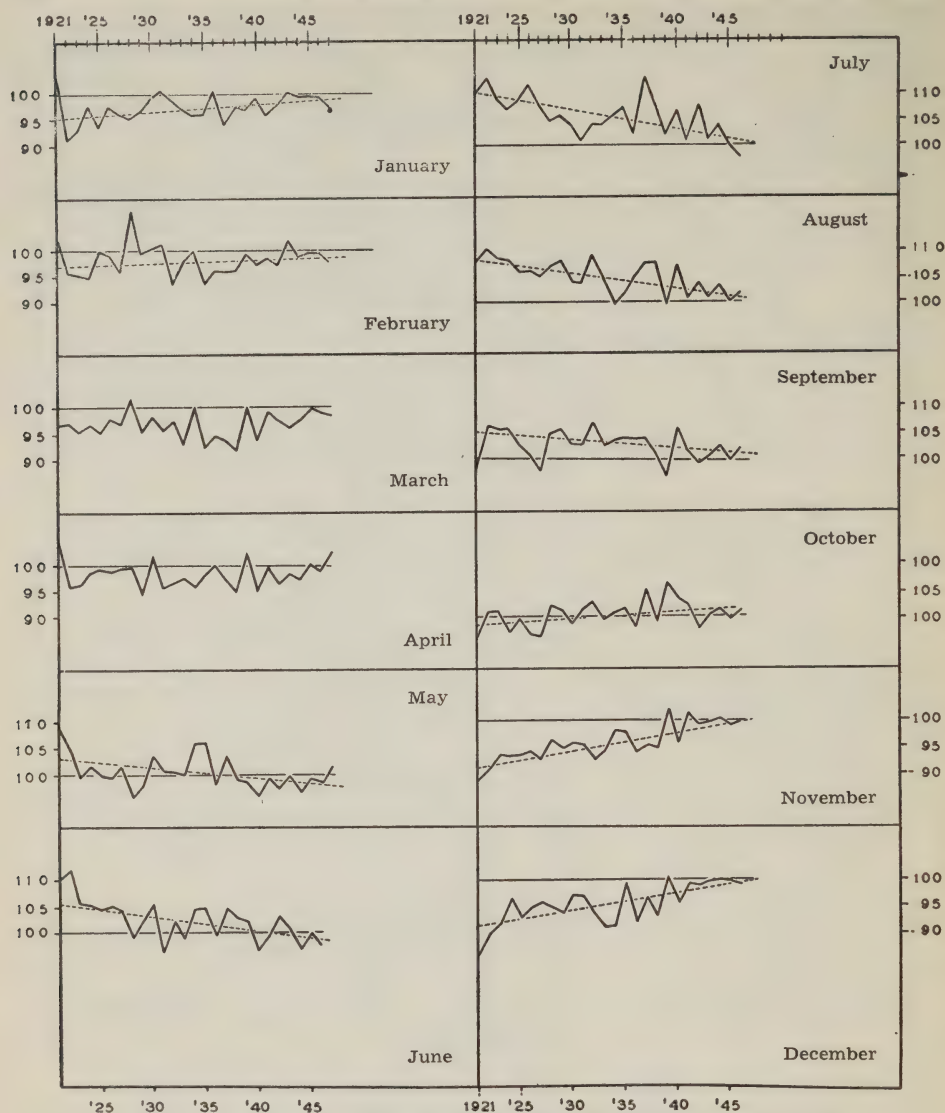


Chart No. 2—Monthly indexes of retail prices of sirloin steak at Toronto

upward trends occur in the months of September, October and November. These trends may be the results of (1) shifts to feeding more cattle during the winter months in order to take advantage of the usually higher spring prices and at the same time reducing the relative number of cattle marketed when the prices are usually at a seasonal low level, or (2) the result of a gradual change in time of marketings without any large scale change in winter feeding practices.

There were extremely wide variations in seasonal price ratios during the decade beginning 1930. This variability reduces the usefulness or reliability of a single average index for interpreting price movements. The effect of ceiling and floor prices during the war years resulted in a marked reduction in variation which is clearly seen in the charts.

Trends in seasonal variation of the Toronto retail price of sirloin steak are shown in Figure 2. Downward trends exist for the months of November to January inclusive. These trends in retail prices of beef may be explained by changes in production and storage practices, as well as by changes in consumers eating habits. The relatively small variations in the seasonal data of retail prices contrasts markedly with the wide variation in live cattle prices.

The knowledge that a trend exists in an index of seasonal variation may be important in interpreting and applying the index. In addition, the extent of variation from year to year in the seasonal value for each month provides a basis for judging the reliability and representativeness of an index of seasonal variation.

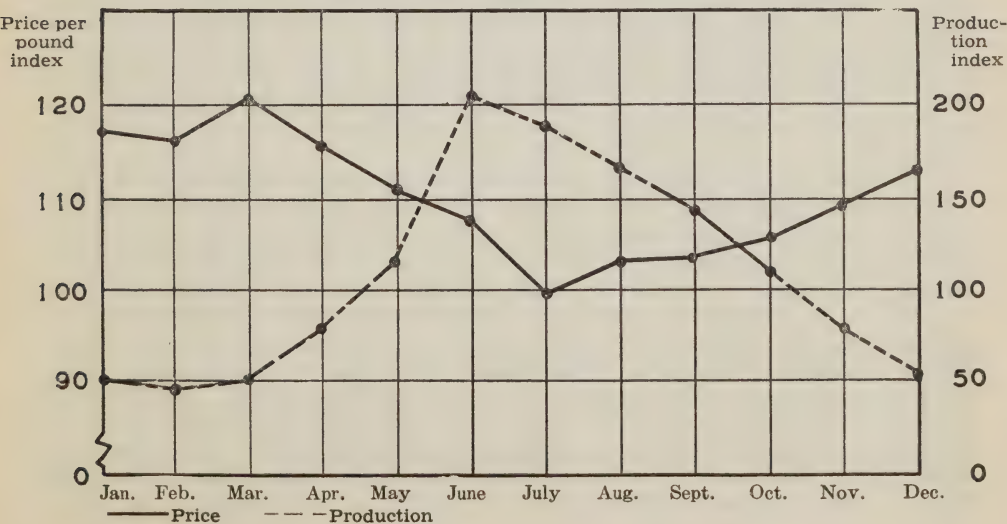
Appendix

The ratio to moving average method was used in calculating these indexes. In this method the trend-cycle curve is approximated by the centred twelve-month moving average of the basic data. The ratio of the basic monthly prices to the corresponding centred moving average is then computed. Seasonal and erratic influences are the main factors remaining in the ratios. The ratios for each month are arranged in arrays and truncated arithmetic means, the extreme values being removed, are calculated. Influences of erratic factors and any error which may have persisted because of the failure of the twelve-month moving average to accomplish its purpose, are eliminated by this step. The final step in computing the index is to make the total of the twelve-month average ratios equal 1200. To accomplish this, each mean is divided by the average of the twelve monthly means.

SEASONAL VARIATION IN BUTTER PRICES

Butter production in Canada is relatively high during the summer months and is relatively low during the winter months. Prices, on the other hand, are usually relatively low when production is high, and relatively high when production is low. During the ten-year period 1929 to 1938, prices were free to fluctuate and reflected conditions of supply and demand in the market.

Seasonal variation of butter prices and production, 1929 to 1938



Monthly butter prices varied, declining when production increased and increasing when production declined. The seasonally high price occurred in March at the end of the winter season of low production and just before the new year's production started to come to market. This seasonal peak price was, on the average, 20 per cent above the average price for the year. The seasonally low price occurred in June when production was at a peak. Prices at this time were two per cent below the average for the year. The seasonal variation in monthly production and prices of butter for the ten-year period 1929 to 1938 is shown in the accompanying chart.

Government controls were placed on prices in 1941 and the usual seasonal variation was replaced by constant prices from month to month. Later, when ceiling prices were removed and floor prices inaugurated, supplies were insufficient to satisfy the requirements of the domestic market and summer price declines did not materialize. However, with butter output more nearly approaching domestic requirements, some seasonal movements in prices may be expected to occur again.

SEVENTH INTERNATIONAL CONFERENCE OF AGRICULTURAL ECONOMISTS

The seventh International Conference of Agricultural Economists was held at Stresa, Italy, August 21-28, 1949. The Conference was attended by 275 members from 26 countries. Canada was represented by 12 members.

The various topics studied included: peasant farming, Italian agriculture, land reform in Italy; price-fixing in British agriculture, evaluation of productive factors in agriculture, methods of reducing costs of agricultural production in a high cost area, land valuation and credit, farm appraisal problems in the Netherlands, agricultural co-operation and the modern-state; the work of Economic Co-operation Administration, some aspects of Canadian international trade, the progress of agricultural recovery in Germany; the spread of industry in rural areas, and the present condition of agricultural statistics in Europe.

A paper on *Evaluation of Productive Factors in Agriculture* was presented by Professor W. J. Anderson of the University of British Columbia. Professor Anderson argued that the main costs with which the agricultural entrepreneur ought to concern himself are not average or total costs but marginal costs.

Dr. G. L. Burton of Macdonald College, Quebec, read a paper on *Some Aspects of Canadian International Trade*. He stressed the fact that by far the largest volume of Canadian imports come from the United States and that beef and beef cattle will continue to be the Canadian farm products best able to compete on the American market. In Dr. Burton's view, Canada should not count too much on selling livestock and poultry products on the United Kingdom market before a solution is found to the dollar problem. Another problem of interest to the Canadians is the increasing trend towards state trading in the United Kingdom and its probable effects on the structure of our trade with that country.

Dr. J. F. Booth voiced Canada's concern over the European self-sufficiency programs. If these lead to a reduction in international trade they may also have disturbing effects on the economy of large exporting nations like Canada. Dr. Booth also stressed the difficulties involved in the Canadian triangular balance of payments with the United Kingdom and the United States.

Mr. L. K. Elmhirst of Dartington Hall, Totnes, Devon, England, was re-elected president. The two vice-presidents, Professor G. Minderhoud, Landbouwhoogeschool, Wagenigen, Netherlands, and Professor E. C. Young, Purdue University, Indiana, U.S.A., were also re-elected. Two other vice-presidents were elected: Professor A. W. Ashby, Agricultural Economics Research Institute, University of Oxford, England, and Sir M. B. Nanavati, The Indian Society of Agricultural Economics, Bombay, India. Mr. J. R. Currie, Dartington Hall, Totnes, Devon, England, continues his dual functions of secretary and treasurer.

INTERNATIONAL LABOUR OFFICE
PERMANENT AGRICULTURAL COMMITTEE HOLDS THIRD MEETING

The third meeting of the Permanent Agricultural Committee, International Labour Organization, was held in Geneva, September 1-10, 1949. The matters considered were: (1) hours of work in agriculture, (2) security of employment and occupation in agriculture (special problems of the agricultural population in under-developed countries), (3) medical examination of children and young persons for fitness for employment in agriculture, (4) extension of social security to the agricultural population.

The Committee gave extensive study to items (1) and (3), including consideration of the findings of previous meetings and reviews of detailed reports on developments in various countries prepared by the Agricultural Division of the International Labour Office. They then recommended that these matters be referred to the Governing Body of the International Labour Office with a view to having them placed on the agenda of an early session of the International Labour Conference.

Reports submitted to the Committee indicate that these matters are already the subject of regulation in urban industry, and in an increasing number of countries in agriculture as well. The Committee drew attention in its recommendation to the necessity of recognizing the peculiar nature of agricultural employment and to the desirability of flexibility in any regulations adopted.

It was brought to the attention of the Committee that these and other matters discussed at earlier meetings have evoked little or no interest among farmers or farm workers in Canada. The relationship of the employed worker to the farm operator and the alternative opportunities available to workers, including those of becoming farmers in their own right, tend to discourage interest in labour regulations.

The other matters dealt with this year—(a) problems of the agricultural populations in under-developed countries and (b) social security for the agricultural population—were supported by excellent documentation prepared by the Agricultural Section. The first item will be further considered at a subsequent meeting of the Committee. The second resulted in a recommendation that the Governing Body place the matter on the agenda of an early session of the International Labour Conference.

The interest of the I.L.O. in the broader questions relating to agriculture and agricultural labour stem from discussion that took place in the inter-war period. Early consideration of the problems of agricultural labour brought the International Labour Organization face to face with the fact that four-fifths of the work done in agriculture is performed by farmers and their families; that in many lands the conditions of livelihood of farmers is not greatly different from that of hired workers; that, on the other hand, the economic and social conditions experienced by hired workers are dependent upon the financial status of the farm operator. These conditions led to the conclusion that the I.L.O. must be concerned with the economic and social status of farmers as well as farm workers. The appointment of a Permanent Agricultural Committee, representative of farm organizations, farm workers' organizations and persons concerned with the economics of agriculture to advise the Organization on agricultural matters, was the outcome.

The Committee met at Geneva in 1938. Activities were interrupted during the war. A post-war interim Committee with a smaller membership met in Geneva in 1947 and again in 1949. With the holding of the meeting just concluded the activities of the present Committee have come to an end. It is expected, however, that a reorganized and more representative Committee will take over the work already initiated.

REVIEW OF LITERATURE

Mission to Haiti.—Report of the United Nations Mission of Technical Assistance to the Republic of Haiti. Lake Success, N.Y., United Nations. (In Canada, The Ryerson Press, Toronto) 1949. pp. xvii + 327.

The Mission, as the Secretary-General of the United Nations points out in the Introduction to the Report, is, in a sense, a precursor of the ampler efforts which the United Nations and the specialized agencies could make through a bold program of technical assistance to under-developed countries.

Mission to Haiti, the Report of the United Nations Mission of Technical Assistance to the Republic of Haiti, records the findings of a team of experts who were sent by the United Nations, at the request of the Government of Haiti, to advise on that country's economic development. The team of international experts for the Mission to Haiti was chosen by the United Nations in consultation with four specialized agencies—the Food and Agriculture Organization; the International Monetary Fund; the United Nations Educational, Scientific and Cultural Organization and the World Health Organization.

This report is divided into two parts containing nine chapters and several appendices. The Introduction to *Mission to Haiti* gives basic facts and findings of the Mission, together with several general recommendations. Part I of the Report analyzes demographic, educational and health problems affecting Haiti's economic development, and submits a number of specific recommendations. Part II discusses problems of production, transport, trade and finance as factors in Haiti's economic development, and makes further specific recommendations.

Commercial Fertilizers. FAO Commodity Series. Bul. No. 17. Washington, D.C., Food and Agriculture Organization of the United Nations. (In Canada, The Ryerson Press, Toronto) Sept. 1949.

World Fiber Review 1949. FAO Commodity Series. Bul. No. 14. Washington, D.C., Food and Agriculture Organization of the United Nations. (In Canada, The Ryerson Press, Toronto) Aug. 1949.

Dairy Products. FAO Commodity Series. Bul. No. 16. Washington, D.C., Food and Agriculture Organization of the United Nations. (In Canada, The Ryerson Press, Toronto) Sept. 1949.

Fats and Oils. FAO Commodity Series. Bul. No. 13. Washington, D.C., Food and Agriculture Organization of the United Nations. (In Canada, The Ryerson Press, Toronto) Aug. 1949.

Efficient Use of Fertilizers. Washington, D.C., Food and Agriculture Organization of the United Nations. (In Canada, The Ryerson Press, Toronto) Aug. 1949. pp. x + 182.

These five new publications by the FAO provide excellent information on a variety of subjects. The bulletin on Commercial Fertilizer presents data on the world production, distribution, and consumption of the three major commercial plant nutrients—nitrogen (N), phosphoric acid, (P_2O_5), and potassium (K_2O), usually referred to in fertilizer practice as nitrogen, phosphoric acid, and potash. The figures cover the years 1946-47 and 1947-48 and the estimated production and consumption for the year ending June 30, 1949.

The volume of fibers produced and consumed in the world is approaching pre-war levels. Yet, with an increase in world population of about 10 per cent over the last decade, world production and consumption of fibers per caput in 1948-49 were still about 15 per cent below the levels of the last pre-war season. Despite some slight expansion of world fiber shipments in each successive post-war season, the recovery of world fiber trade in the post-war period has been generally slower than that of both world production and consumption.

The dairy products situation, as revealed by the FAO report, indicates that on the whole, milk output in the major producing areas of the world is about 90 per cent of pre-war. Targets and projections indicate that European countries hope by 1950-51 to have production of milk, butter, and cheese near 90 per cent of pre-war. Although goals for some countries appear very optimistic, and in some cases unrealistic, their attainment for Europe as a whole appears possible if the weather is favourable. There is a tendency, however, for the European countries to project large exports and small imports.

Steady recovery in the world production of fats and oils and in the volume of fats and oils in international trade during the past 12 months has greatly alleviated the world fat shortage. Rationing has ceased in some countries and has been relaxed in many others. International allocation recommendations were discontinued in February 1949. To a growing extent currency difficulties, rather than a shortage of supply as severe as that hitherto characterizing the post-war situation, limit the ability of many countries to increase their imports of fats and oils. This bulletin, therefore, reviews the supply and distribution situation in an endeavour to provide a perspective against which the individual problems of each sector can be better assessed by those concerned. A considerable amount of statistical material much of which has not hitherto been available, has been assembled, but a detailed analysis for particular countries and commodities is not given.

The efficient use of manures and fertilizers is one of the most important technical factors in food production. This monograph deals with the subject especially for agricultural administrators and advisers who work with farmers and farm organizations. It is not an exhaustive treatise for technicians. Nor is it a detailed handbook of complete recommendations for particular local areas. Rather, it has a different purpose from either of these—the purpose of helping agricultural administrators and advisers all over the world to spread the available knowledge about fertilizers and their use for crop production.

Livestock and Meat.—FAO Commodity Series No. 12. Washington, U.S.A., The Food and Agriculture Organization of the United Nations. May 1949. (In Canada, The Ryerson Press, Toronto) pp. 97.

This FAO report outlines the 1943 world livestock situation and the outlook beyond 1949. The volume of world meat production in 1948 is estimated to have been from five to 10 per cent less than the 1934-38 annual average and slightly less than 1947 production. World livestock numbers in early 1948 were not far different from pre-war; there had been a slight rise in cattle numbers and a drop of five or six per cent in numbers of hogs and sheep.

Almost 90 per cent of the world's meat is consumed in the regions where it is produced. The chief meat-producing countries, therefore, have the highest per caput meat consumption rates.

Only 10 to 12 per cent of the world's meat production enters international trade, and of this quantity 80 to 85 per cent went to the United Kingdom in the pre-war period and 60 per cent in 1948. In 1948 the total volume of shipments from the eight major meat exporters of the world—Argentina, New Zealand, Australia, Canada, Uruguay, the United States, Denmark, and Brazil—fell about 16 per cent below the 1947 volume of exports and about 10 per cent below the pre-war average. The decline, which occurred in all the above countries except Canada, Uruguay, and Brazil, was greatest in Argentina and the United States. The United States, which was the world's largest exporter in 1943, reverted to its pre-war status as a net importer of meat in 1948; and in Argentina a reduction in meat output, together with some increase in the domestic demand for meat, cut exports by 22 per cent from the 1947 level.

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